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ABSTRACT

Nine selected papers presented at the Texas Writing Research Group's 1981 conference are offered in this collection. The papers discuss (1) sources of linguistic interference among American minorities; (2) contributions of discourse analysis to composition; (3) emerging notions of heuristic (investigative), eristic (controversial), and protreptic (persuasive) rhetoric in Homeric discourse: proto-literate conniving, wrangling, and reasoning; (4) the interactive process of evaluation in the writing conference; (5) sentence combining; (6) evaluation, revision, and instruction in writing; (7) the historical origins of writing; (8) the role that semantics plays in the production of written discourse; and (9) nuclear structures in discourse. (RL)

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SELECTED PAPERS FROM
THE 1981 TEXAS WRITING RESEARCH CONFERENCE

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PREFACE

In the summer of 1980, six faculty members who were engaged in research on writing at The University of Texas at Austin, met informally to talk about forming a group to support and promote continued research in composition on the Texas campus. Out of that meeting grew the Texas Writing Research Group, an interdisciplinary group of people who were actively working on a wide variety of issues and problems connected with writing and the teaching of writing. The Texas Writing Research Group has several goals, but one of the most important is strengthening the network of communication about research among scholars within The University of Texas and with those at other institutions around the world. To further that goal, the group asked for financial support from the Deans of Liberal Arts, Education, and Communication. They gave it, and TWRG's work was under way.

By happy accident, TWRG came into existence only a few months before the annual meeting of the Conference of College Composition and Communication was to be held in Dallas, Texas in March, 1981. The group took advantage of that coincidence to speculate that it might be able to persuade many of the scholars who would be coming to the Dallas meeting to come early to Austin for a conference on The University of Texas campus. That idea turned from a possibility to a reality when the Exxon Education Foundation responded to our request for supporting money with a generous grant. With that grant and with money given by the Departments of English and Computer Science, as well as that already committed by the Deans of Liberal Arts, Education, and Communication, we were able to invite eighteen distinguished researchers to the Texas campus, including two U.T. faculty members from outside the TWRG group. That money has also made it possible to publish these papers and the first research report of the Texas Writing Research Group, A Comparison of Analytic And Synthetic Approaches to the Teaching of College Writing.

On the morning of March 24, 1981, the first official conference of the Texas Writing Research Group opened at the Joe C. Thompson Conference Center on The University of Texas campus. For one and a half days, participants took part in a series of six panels that spanned a wide range of topics in rhetoric and composition: The Writing Process, The History and Theory of Writing, The Evaluation of Writing, Basic Research in Writing, Writing Across the Disciplines, and Discourse Analysis. Some of the papers were historical, some were theoretical, some were pedagogical, and some were reports of empirical research. They effectively represented the broad scope of research and scholarship now going on in the field of composition. The papers we have been able to reprint in this volume exemplify the variety and quality of presentations that the audience of two hundred listened to at what we hope was only the first of many public conferences to be sponsored by the Texas Writing Research Group at The University of Texas.

Maxine Hairston
Cynthia Selfe

SOURCES OF LINGUISTIC INTERFERENCE AMONG AMERICAN MINORITIES

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In order to fully utilize our human resources in the future we must come to some objective understanding of the social and cultural differences among various groups in the society. As Hall and Freedle (1975) have indicated, the perpetuation of melting pot myths has been very misleading. In terms of trying to delineate the actual subgroupings of this melange, linguistic science and history come to serve us well. In this regard I will examine aspects of three American English vernaculars: namely, Black English vernacular (BEV), Hawaiian Pidgin English (HPE), and American sign language (ASL). Unlike many American ethnic dialects with strong bilingual traditions, the preceding vernaculars have emerged at greater social distance from standard English (SE). This background of isolation in turn complements the linguistic differences that we find in our modern classrooms.

The fact that black children have had reading problems has been known for quite some time. However, the available linguistic evidence is often difficult to convert to such a practical matter. For my purpose here it will be most useful to look at some common social denominators, and, more specifically, to view these social factors within their proper historical context. At present that history can be examined from the standpoint of the speech community members, and the collaboration of scholars who have studied these communities. For example, there are significant similarities regarding the birth and subsequent research of both BEV and HPE; that is, a pidgin (i.e. contact vernacular) genesis with ensuing decreolization in the direction of SE. More directly related to dialect differences with standard English, these native American English vernaculars were born as a result of new world trade. Most other ethnic minorities in the United States can identify their ancestry with well established European languages, languages with a rich literary tradition. BEV and HPE, on the other hand, are spoken vernaculars with deep oral histories. Story tellers are still very popular and often held in high esteem in these vernacular communities. Although it may have been possible, quite some time ago, to equate speech community membership with ethnic and/or racial boundaries, the increasing social stratification of American minorities--to all sectors of society--no longer allows us to link ancestry with speech in any hard and fast way. Our evolution has given rise to states of linguistic diversity, and this reality is particularly critical when reading skills are involved.

The case for American sign language differs somewhat; first of all, the minority is distinguished by a biological handicap, that is, as opposed to racial or ethnic heritage. It is therefore quite possible that a deaf child who is born, say, into a standard English home may learn ASL as their primary (i.e. native) language. Once these biological differences are considered, though, we can readily see that all of these American English vernaculars have developed in relative isolation from the mainstream standard.

Many of our social problems are best expressed by members of the minorities themselves. The following quotation from a 32 year old male BEV informant outlines some of the major problems for all of these vernacular speakers/signers, and, his observations about minority limitations serve as a foundation for my remarks.

> . . . I feel like nothing. . . that no one should be limited. This is something that I feel pretty close to about limits anyway. I feel like black persons has enough limits on them now. . . and humans as a whole has--has limits. So, black music, or black awareness should be geared in the direction of blacks, let me say, first, and then spread all over. Because when blacks become aware of themselves it's gonna be spread anyway. (T-890/B)

For my purpose here it will be useful to think of these limitations as being associated with combinations of social and linguistic factors. The first part of this discussion will review some of the purely linguistic differences; more specifically, examples that could easily represent sources of confusion when acquisition of SE is the primary objective. I will then turn again to some of the relevant social issues and compare them to other ethnic groups with bilingual histories.

Let us begin, then, by considering some of the different linguistic features that can be found which are characteristic of BEV. For the sake of illustration I will provide two relevant quotations with each example in Table 1:

TABLE 1

NON-STANDARD FEATURES OF BLACK ENGLISH VERNACULAR

be (habitual)

They be tellin' 'em the same thing.

All the homeboys be hustlin'.

been (stressed)

I been had that car.

She been bought that record.

Multiple Negation

They ain't no brothers can't make no track team.

It ain't no way no girl can war no platforms to no amusement park.

be done (future)

They'll be done drunk up all the beer.

I'll be done got my own C.B. waitin' on him.

steady (aspectual)

They be steady rappin'.

You just steady be on everybody's case.

copula variation (is → s → ∅)

He is coming	He's coming.	He comin(g).
She is home.	She's home.	She home.

In the simplest terms, the preceding grammatical forms are very productive for BEV speakers. That is to say, these utterances are grammatical; however, because they are nonstandard, many students will be required to recognize subtle differences between their native dialect and the newer dialect of the classroom. The fact that sentences like those in Table 1 are productive places a special burden on the student, as well as the teacher. In short, the similarities between the dialects, that is, BEV and SE, are generally difficult to detect with specificity during the course of ordinary conversation, to say nothing of related problems associated with literary skills (see Labov, 1972).

To further illustrate the point we can turn to the variable nature of past tense marking in HPE. The following passage was produced by a native adolescent Hawaiian among his peers. The discussion focuses on the speaker's aunt and how she became paralyzed in a confrontation with other natives:

> Auntie Mary was picking up the chili peppers, eh. . . ? My auntie Mary was picking up chili peppers, eh? So,. . . she. . . the guys was, . . . see--get this. . . They was in the house it just like, uh, patio--like had screen, eh? So my auntie (n) them was sleeping inside there. They was, they--so my auntie Mary wen go outside was gon pick chili peppers at the tree. (Night time?) Yeah. Cause, so she started picking 'em and them from on top they stay on the mountain and she (unintelligible). So think was coming down, so my auntie, my auntie told us that. . . so my auntie was. . . they was calling her for get away from there, eh? But she couldn't hear already cause, you know, the guys was singing. . . and the pounding and all that. And the guys wen come and they wen stop. All my auntie (n) them could do was just, you

> know. . ., watch. So the guys came and they get the bull, eh?, in the front. (Their leader.) So my auntie Mary just look at 'em. So the bull, you know, the leader, look back and wen go they was talkin' in Hawaiian, eh? If the lady in front of them get family inside the line--and she never have, eh? So the guys wen go, you know, pick her up and slam her down and was doing all kind stuff. And, she wasn't like that. You know I no joke you too, after her whole right. . . her whole right side was paralyze, eh? I never know that 'til my auntie just told us that. I thought she just wen got into a car accident and she wen die after that.

The preceding passage is quite useful here, not so much for the exposition of HPE, but for the fact that it reveals multiple locations for variation with SE. In Table 2.1 below some of the "wen verb" sentences are presented with their SE equivalent, and, in Table 2.2 additional SE options are examined along with their HPE counterpart.

TABLE 2.1

PAST TENSE OPTIONS IN HAWAIIAN PIDGIN ENGLISH

so my auntie Mary wen go outside was gon pick chili peppers.

so my auntie Mary went outside was gon pick chili peppers.

And the guys wen come and they wen stop.

And the guys came and they stopped.

so the guys wen go, you know, pick her up and slam her down. . .

so the guys, you know, picked her up and slam her down. . .

TABLE 2.2

POTENTIAL SITES FOR HPE NON-STANDARD VARIATION

they was calling her for get away from there.

they wen call her for get away from there.

Auntie Mary was picking up the chili peppers.

Auntie Mary wen go pick up the chili peppers.

So my auntie (n) them was sleeping inside there.

So my auntie (n) them wen go sleep inside there.

In nearly every case we find that the wen form can be used optionally to mark past tense; the nature of this variation is far more complicated than my brief remarks might imply, but, for pedagogical implications, we can recognize that the separate vocabulary item, wen, does the same grammatical work as do /-t/ and /-d/. Furthermore, these morphological endings are very difficult to hear in ordinary conversation due to their phonological brevity. Thus, the nature of the variation is not strictly governed by internal linguistic processes ; rather, HPE speakers have additional stylistic options, options simply not utilized in the prescriptive standard norm. Like the situation with black English, the similarities to SE could easily represent a more immediate source of confusion to students, that is, in opposition to the clear differences between the dialects.

Before turning to sign language we must again appreciate an important social fact: black speech and Hawaiian Pidgin have been isolated from SE predominantly for racial and/or geographic reasons. Deaf signers, on the other hand, are not delineated along recognizable social boundaries. Nevertheless, there is a common trait of isolation from SE.

To illustrate this point with sign language I will simply provide a single anecdote which reveals some of the substantive differences in the communicative needs of signers versus typical speakers. The use of the word "glass" will serve our needs. Briefly, the most formal variety of sign language is that style which attempts to mirror the structure of spoken (standard) English as closely as possible. Speakers often take for granted the fact that synonyms are usually disambiguated by the immediate discourse context, but this may not be so easy when one is required to spell out each word or have a sign for its equivalent. For example, if a speaker says, "Would you please bring the glasses?" or "Would you please bring the glass?", there are several possibilities that could be acceptable. Does the speaker mean glasses for containing liquids, or glasses for eyesight; and does the second question imply a single drinking glass, or some form of the general substance? These questions seldom, if ever, arise in pure ASL because signers have developed new symbols associated with these different kinds of glass. In other words, spoken English has been able to utilize the single vocabulary item, but, signers have incorporated additional vocabulary items to handle this problem.

Without going into too much detail here we should also appreciate that there are some significant grammatical differences between ASL and spoken English.[1] That is to say, there are several instances where the syntax of the two dialects (languages?) are quite different. This differs, then, from the HPE and BEV situations where there is a greater degree of grammatical similarity to SE. One final distinction helps to emphasize the physiological factors which affect the isolation of ASL: namely, the channel of communication (see Hymes 1974, and Table 3 below).

TABLE 3

PRODUCTION AND RECEPTION DIFFERENCES FOR SPEECH AND SIGN

	Means of Production	Means of Perception
SIGN	Hand Articulation	Visual Reception
SPEECH	Vocal Articulation	Auditory Reception

A simplistic review of purely linguistic differences is not sufficient to explain the full story behind these American English vernaculars. We now turn to some of the social pressures that influenced the development of nonstandard American dialects.

There is an unquestionable feeding and bleeding relationship between the emergence of socially stigmatized dialects and the social isolation of speech community members from the dominant dialect. In all of the illustrated cases folk beliefs among the general populace apparently reinforced the dialect differences. Looking initially at the pressures affecting the deaf, until quite recently it was not uncommon to find people who thought the deaf were mentally inferior to the average person in the speaking community. Ensuing attempts have been made to help the deaf overcome this false impression, and there are several communication programs that offer a variety of training. Nevertheless, in order to appreciate the pressures on sign language, we need to recognize the relationship between dialect variation and the historical circumstances that fostered these linguistic differences.

The overwhelming tradition in the past, and still prevalent among main practitioners today, has been to teach the deaf to speak. For the most part this position has been stressed by those who feel that it is preferable to integrate the deaf into the speaking population. And, because the speaking majority are unlikely to learn ASL, the signing minority has been encouraged, and in some cases coerced, to adopt speech. The argument behind this position is largely social; the motivated deaf child is presumed to want to make the necessary personal sacrifice in order to communicate with members of the speaking population. Others, primarily among the deaf, have claimed that they would rather use ASL with fluency among a restricted population than to communicate less effectively with the larger speech community. From the standpoint of social pressure, however, these positions have not been presented with any sense of parity. Constant pressure, including occasional corporal punishment, has been used to eliminate ASL in favor of SE. This pressure in turn gave rise to the belief that ASL was an inferior form of communication. This attitude of inferiority is historically consistent with the BEV and HPE situations as well. Native speakers are made to feel that their primary dialect is flawed in some substantive way. This belief is, again, the result of stereotypes within American folk culture and has no basis in linguistic fact. The social pressure to use SE, then, created an atmosphere where native vernacular speakers/signers came to adopt two, or perhaps more, styles of speech/sign depending on several social and linguistic factors. And, as illustrated in Table 3, the production and reception of sign versus speech is open to more complex neurological questions, that is, hand-to-eye versus mouth-to-ear communication.

The pressures that affect HPE and BEV are, once again, similar to the circumstances faced by signers from the perspective of social isolation. However, the social backgrounds of HPE and BEV are remarkably similar as far as the birth of the dialects is concerned. Thus, as we shall see in greater detail momentarily, the emergence of these contact vernaculars differs from the typical bilingual histories that are so common to other ethnic groups in the U.S.

One fundamental difference, though, is that the Hawaiians' home land was occupied by non-natives; whereas black slaves were taken from their homes. In both cases we find extensive evidence to support the fact that the new contact vernaculars came to be stigmatized along with the lower social status of their users. It was therefore considered to be a liberal gesture to "teach the children not to make mistakes." Yet, because these children were not making grammatical errors (i.e., as opposed to prescriptive errors), the underlying assumptions about the inadequacy of HPE or BEV were rarely questioned. Rather, thousands of dollars have been invested in programs that attempt to provide non-standard speakers with access to the mainstream dialect. This well intended goal often had the consequence of deflating the vernacular speakers' self image. In other words, the fact that so much emphasis had been placed on speech improvement tended to reinforce negative attitudes toward the vernaculars.

There was increased pressure on many Hawaiians, because, prior to statehood, many natives were told that they would not be accepted as true United States citizens as long as they spoke with "so many errors." The depth of these pressures to eliminate HPE are characterized in the following song which was used in Hawaiian classrooms:[2]

Sung to the tune of "The Battle Hymn of the Republic"

We need to speak American at school and when we play;
We need to help each other hear our errors day by day;
We need to join together as we open up the way
For American speech to win.

Glory, glory, hallelujah, etc.
American speech must win

Let's all resolve to practice every little bit we know;
To make good speech as popular as going to a show;
Let's all resolve to do our best to make pidgin English go
Down and out in 1944.

No social or cultural value was given to the native vernacular, largely because it was seen as an inferior form of communication. And, because HPE is easily recognized, especially when compared to SE, the negative attitudes toward the dialect are still quite common today.

Like the Hawaiians, slaves from Africa were faced with a completely different linguistic system, a language that was introduced with a preestablished position of social domination. Just as it was unlikely that the speaking majority would learn sign language, the traditional stigma associated with BEV tended to reinforce linguistic differences through racial isolation and related hostilities. But to fully appreciate why today's black child is still having reading problems we must consider the unique linguistic history of slavery in the United States. When slaves were brought to the new world their traders were afraid of uprisings and therefore separated those who spoke the same language. This practice represents one of the first documented instances of language planning; in this instance the death of African language was the goal, and, for the most part, the plan worked. Slaves were forced to learn a completely different language. Three relevant factors serve to illustrate the relevance of this unique linguistic history:

1. SLAVES WERE ISOLATED FROM THEIR NATIVE LANGUAGE

   By preventing the use of the native language reliance was forced on the new language--in this case, English.

2. ACQUISITION OF EXISTING NON-STANDARD ENGLISH

   For the most part slaves learned English from overseers in the field. Often these overseers were among the lowest social segments of the white population. And, more important from a linguistic view, they spoke a dialect

> that represented one of the first models of English for the slaves.

3. IT WAS A CRIME TO TEACH SLAVES TO READ

> Perhaps this is the most devastating restriction of all because slaves were denied access to the traditional literary tools that explained the grammatical rules of SE. This legacy gave rise to an oral tradition among blacks, and, until quite recently, this oral history represented some of the most reliable evidence about the slaves and their posterity.

The background of these American English vernaculars could, of course, be examined in much greater detail. But, for the moment, we can readily see that these histories have given rise to productive nonstandard vernaculars.

At this point I would like to suggest that the preceding vernaculars face different pedagogical problems than do the more obvious cases of bilingualism. Einar Haugen has examined this problem in some detail among several minorities in the United States, and he has observed that a standard dialect is characterized by a minimum range of linguistic variation but maximum social utility. The difficulties associated with becoming bidialectal, then, are most clearly revealed when socialization is taken into account; one must acquire, in addition to any linguistic skill, the ability to discern the various social situations where one dialect or the other is generally considered to be appropriate. Haugen's (1972) discussion of bilingual competence clarifies both similarities and differences for bidialectal competence.

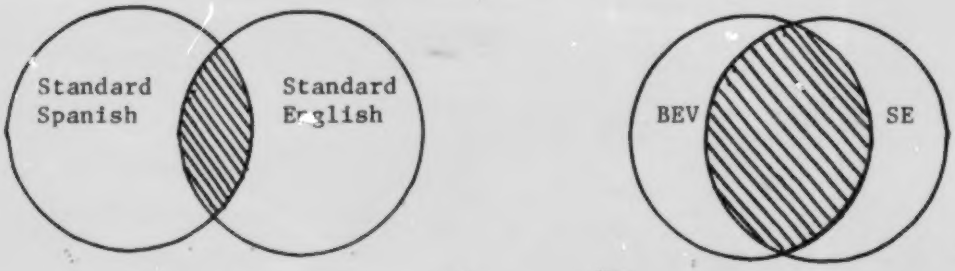
> The key to the bilingual's competence lies in the necessity for alternating his codes, a process usually referred to as switching (72:314).

The key to a bidialectal competence thus appears to lie more with a perceived need for alternating styles, and this process can be thought of as shifting.

Comparing two well known cases in the U.S., Figure 1 represents the degree of linguistic overlap between standard Spanish/standard English and BEV/SE.

FIGURE 1

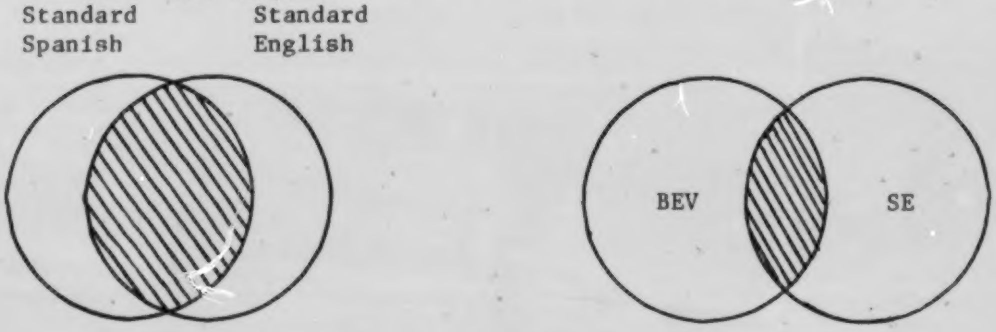
Common Linguistic Denominators for Standard Spanish/ Standard English and BEV/SE:


Standard Spanish
Standard English
BEV
SE

1a

1b

Functional Domains for Standard Spanish/Standard English and BEV/SE:


Standard Spanish
Standard English
BEV
SE

2a

2b

For the most part the points of intersection between Spanish and English are comprised of shared vocabulary. It is therefore unlikely that intelligible conversation would take place between monolinguals, at least without the help of major translation. The BEV/SE situation, though, finds that there are far more linguistic similarities than differences (e.g. phonologically, morphologically, lexically, and syntactically). The larger shaded area in Figure 1b indicates this greater range of shared linguistic features. In turn, logic would tell us that these shared linguistic systems would provide greater chances for mutual intelligibility during conversation. However, in light of the fact that these dialects are similar, one can legitimately question the persistent differences that distinguish the vernaculars; in short, this is due to language functions.

In Figure 2 the Venn diagrams correspond to the functional domain for each of the represented languages/dialects. The inversion of the shaded areas reveals the fact that BEV and SE, while structurally similar, are used for very different social purposes. Standard Spanish and SE, meanwhile, are both well established written languages which can be used--as Haugen suggests--with maximum social utility. Therefore, while Bev and SE can be shown to share many linguistic characteristics, the functional differences--not the linguistic differences--appear to perpetuate the separation of these closely related dialects.

By recognizing these cultural, social, and linguistic differences in their proper historical context, we will be better equipped to provide students with equitable education. In the best of all circumstances our efforts today will provide tomorrow's student with legitimate opportunities to be productive within the mainstream society with a greater chance of success.

FOOTNOTES

[1] Dorothy Lee has been conducting research on ASL variation which suggests greater syntactic variation between SE and ASL than for non-standard (spoken) English vernaculars.

[2] Cynthia Char is primarily responsible for introducing me to similarities between the social pressures affecting Hawaiians and black Americans.

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CONTRIBUTIONS OF DISCOURSE ANALYSIS TO COMPOSITION

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1. Formal discourse analysis

1.1 On the face of it, the theory and method or writing should be able to draw upon linguistics, the science of language. Some methods were indeed derived in this way, e.g. structural analysis (Roberts, 1958) and sentence-combining (Bateman & Zidonis, 1963). But all in all, the "revolution in teaching" proclaimed by Postman and Weingartner (1966) never came about. Indeed, some scholars doubted that there could even be such a thing as a linguistic approach to composition (Marckwardt, 1966).

1.2 This skepticism is well justified, but it should not lead us to such a drastic conclusion. At present, an offshoot of linguistics known as DISCOURSE ANALYSIS is being explored as a source for composition. We must now consider whether it can or should be such a source; and conversely, what direction discourse analysis could take if it were to serve as a source (Beaugrande, 1978).

1.3 The term "discourse analysis" entered American linguistics through some papers by Z.S. Harris (1952). The designation was expressly that of "beyond the sentence linguistics," which, for most researchers of the time (except Kenneth Pike) was a novel idea. No one doubted that English sentences have many regular, rule-governed patterns. But no one until Harris thought of comparing the patterns of sentences within a single discourse, as opposed to within the language at large. Harris wanted to learn whether the formal "equivalences" among the sentences of a discourse might serve in a formal definition of discourse. The definition would "represent the order of successive occurrences of members of a class," and thus state "what criteria a new sentence must satisfy to be formally equivalent with the sentences of the text" (Harris, 1952: 8, 493).

1.4 Harris soon found that the formal equivalences in his samples were few and far between. At the end of the analysis, much of the samples was left untouched. So he introduced into linguistics the fateful notion of "transformation" as a technique for obtaining more equivalences. For instance, to make (2) equivalent to (1), he transformed it into (3):

(1) You will be satisfied
(2) Satisfied customers
(3) Customers are satisfied

--a manipulation that was later to become famous as the "attributive transformation." This technique was applied over and over until a maximum of formal equivalences was obtained.

1.5 Several interpretations can be placed upon Harris's version of "discourse analysis." The broadest might be: if English has a limited repertory of sentence patterns, then the sentences within a discourse should be at least partially equivalent in their formats. As such, the premise is readily obvious, and the demonstration is trivial. A more specific and interesting interpretation would be: it is the nature of a discourse to be constituted with special classes or degrees of equivalences among its component sentences. A still more interesting corollary would be: the production of a discourse is guided in part by the emergence of these partial equivalences. These claims are not obvious, nor is their demonstration trivial. The first must be explored with structural analysis of samples, while the second is in the domain of empirical experimentation and observation.[1]

1.6 However, the testing of these claims is rendered ambivalent by the notion of "transformation" itself. The investigator is in effect enabled to create equivalences rather than just to discover them. Hence, there is always a danger that the actual data is expressly made to conform to the theory rather than vice versa. Suppose we postulate, for example, that a discourse should have a degree of formal equivalences higher than 50% of its total patterns. We might easily perform just enough transformations to make this precise total result, and then stop. Such a procedure is unappealing, to say the least.

1.7 In fact, the claim about degrees of equivalence was tested by Bierwisch (2965), when Harris's papers were reprinted in 1963. In the meantime, it had become a standard aspiration of grammarians to define the borderline between well-formed and ill-formed sentences of the language (following Chomsky, 1957). Bierwisch thus argued that Harris's method would be successful only if it could distinguish between well-formed and ill-formed discourses. To show that it could not, Bierwisch created a bizarre sample that, despite its formal equivalences, seems hardly a reasonable discourse. Rendered into English, it would run (Bierwisch, 1965: 72):

> (4) There is no one whom her singing doesn't enrapture. Our singer is named Josephine. Singing is a word with seven letters. Singers use many words.

The transformations needed to get equivalences are plain enough, centering on lexical items like "singer/singers/singing" and "word/words." But the discourse doesn't make sense, unless we imagine a weird context such as a school assignment like "How many statements can you make using the word 'sing'?" The first two sentences seem to be in their reverse order. The third sentence suddenly shifts to the domain of "meta-language" and says nothing that could possibly be relevant to the talents of Ms. Josephine. The final sentence shifts back to the topic of "singers," but again seems unrelated to Josephine: we might infer that the lady is very talkative, however, and thus impose coherence after all. So the stumbling block is above all the third sentence, i.e. the shift from language to meta-language that prevents the formal equivalences ("singing," "word") from constituting coherence relations.

1.8 The empirical claim--that formal patterns tend to assume equivalence during discourse production--was never tested by Harris or any of his respondents. But a similar claim was implied when Chomsky borrowed Harris's notion of the "transformation" for a very different purpose:

to define sentences not in a discourse, but in the entire language. In effect, Chomsky was postulating that all sentences of English must conform to classes and degrees of formal equivalence, regardless of any discourse context. Thus, Harris's claim was subsumed and radically expanded by Chomsky; and the discourse as such was lost as a testing grounds in favor of any isolated English sentence that might be adduced.

1.9 If Chomsky's strong postulate is correct, then formal equivalences in discourse are again trivial (cf. 1.5): without the equivalences, the component sentences just wouldn't be sentences. In this spirit, Katz & Fodor (1963) suggested that a text or discourse could be viewed as a super-long sentence that happens to be connected with periods rather than with commas, conjunctions, etc. However, nobody felt like pursuing a discourse analysis along those lines at the time, and for a very good reason: real discourse is not necessarily composed of sentences at all. Indeed, context allows many syntactic patterns to be incomplete or distorted, because other patterns in the vicinity make it clear what the full or normal form should be (cf. van Dijk, 1977b). In this sample (Marya Maynes, The Thin Grey Line):

(5) But honesty is the best policy. Says who? Anyone willing to get laughed at.

we can agree that the complete format might be:

(5a) Anyone willing to get laughed at says honesty is the best policy.

However, this correspondence is not in fact formal, but based on our knowledge of how the situations and events of the real world are normally organized.

1.10 This insight is likely to trouble any formal approach to discourse analysis. A case in point was the University of Constance project to write formal transformational rules for a discourse by Bertolt Brecht (van Dijk, Ihwe, Petöfi, & Rieser, 1972). The number of rules mushroomed alarmingly (estimates ranging between 2,000 and 4,000 for this project alone), and there was still no exact grammar to distinguish the discourse from the non-discourse.[2]

1.11 A different tack was taken in the descriptive rather than the transformational framework by Harald Weinrich (1972). He did not reformulate the discourse, but instead noted the actual occurrences of grammatical classes, such as first/second/third person verbs, tenses, definite/indefinite articles, and so forth. He found that in nearly every category, each class occurrence was followed up by another equivalent occurrence far more often than by an opposite. He concluded that the discourse tends toward "like transitions" rather than "unlike" ones, to use the terminology of information theory. I have suggested that Weinrich's findings also relate to the tendency of systems to seek stability (Beaugrande & Dressler, 1981: 161). Such a claim would be more interesting than the simple presence of formal equivalences (cf. 1.5).

1.12 The usefulness of formal discourse analysis for writing is ambivalent in principle. If we diagnose formal patterns in a set of samples, are we then to prescribe them as well? Precisely the same question arises from the "generative rhetoric" proposed for discourse by D'Angelo (1974). He analyzed the relationships among the sentences of a newspaper article from the Arizona Republic. He noted a high incidence of parallel structures (1974: 393), but he didn't assert that such an incidence was a necessary condition of all discourse. He was rather concerned with the logical and semantic relationships, some of which could be brought out with the support of parallel structures. In so doing, D'Angelo left the confines of formal discourse analysis in favor of more general concerns; and the exact status of formal patterns was left unclear.

1.13 In any event, I would warn very strongly against prescribing formal patterns simply because we diagnose them in a sample of discourse we admire. We must first uncover the motivations for any such patterns, so that we can at least give directions about when and why the patterns should be deployed. The failure to do so has been a continuing weakness of sentence-combining (Beaugrande, 1979a, 1981a, 1982). We now turn to that question.

2. Communicative discourse analysis

2.1 The preoccupation with formal patterns of language that gripped American linguistics for so many decades did not dominate British linguistics. The term "discourse analysis" thereby had quite a different designation in England. Instead of being the study of formal equivalences beyond the sentence, it was the study of "what people mean when they engage in interaction" (Candlin, 1977: x). What people "mean" is not decided by logical proofs, or abstract lexicons; "the meanings of particular communicative strategies, like the meanings of utterances themselves, have to be negotiated" (ibid., p. xi, emphasis added).

2.2 At the very time when Harris (1941, 1952) was attempting to exclude both the meaning and the purpose of utterances from his "discourse analysis" (and from linguistics altogether), John Rupert Firth (1951, cited Coulthard, 1977: 1) argued that language is essentially "a way of behaving and making others behave," so that linguistics must address "the verbal process in the context of situation." Thus, British linguists envisioned discourse analysis not only passing the boundary of the single sentence, but also encompassing the whole of human interaction in which language has a crucial function.

2.3 Firth himself did not present any detailed research program for discourse analysis. Aside from isolated studies, discourse analysis did not become a recognized domain until well into the 1970's. By this time, there was a spectrum of sources to draw upon (cf. Sinclair & Coulthard, 1975; Coulthard, 1977; Burton, 1980). Philosophers had looked into the conditions of speech acts, where people perform actions by means of utterances (e.g. Austin, 1962; Searle, 1972, 1975); and into the principles of conversation (e.g. Grice, 1975, 1978). Sociologists had explored the relation of language to patterns of social behavior, for example, in ethnomethodology (e.g. Gumperz & Hymes [Eds.], 1972); social class structure (e.g. Labov, 1972; cf. Dittmar, 1976); turn-

taking in conversation (e.g. Sacks, 1972; Duncan, 1974; Sacks, Schegloff, & Jefferson, 1974); and *body movement* (e.g. Kendon, 1972, 1973). Anthropologists used such methods to analyse little-known *cultures* (e.g. Baumann & Scherzer [Eds.], 1974). Linguists had probed *intonation* as a mode of signalling communicative contexts and priorities (e.g. Halliday, 1967; Brazil, 1975; Coulthard, Sinclair, & Brazil, 1978).

2.4 However, the most important impetus for the British approach perhaps came from *applied linguistics*, i.e. the use of linguistic theory and method for the purposes of *language education*. A "competence" that only promotes the formation of "grammatical sentences" is tedious and sterile to learn, and not very helpful in real-life experiences. It was only natural that applied linguistics should look to discourse analysis for a broader and more realistic outlook (cf. Widdowson, 1973; Allen & Widdowson, 1974). Research was addressed to matters like the discourse of teachers and pupils in the classroom (e.g. Sinclair, Forsyth, Coulthard, & Ashby, 1972; Forsyth, 1974); the design of course syllabuses (e.g. Wilkins, 1976; Munby, 1978); the contrasting of languages (e.g. Hartmann, 1980; James, 1980); and the learning of second languages (e.g. Wienold, 1973). A related offshoot was the analysis of literary discourse (e.g. Sinclair, 1966; Leech, 1969; Widdowson, 1975).

2.5 Discourse analysis had many points of contact with the established European study known as *text linguistics* (cf. survey in Beaugrande, 1980b; Beaugrande & Dressler, 1981). Many researchers on the continent of Europe has passed beyond the sentence boundary whenever their explorations seemed to require it, most notably in Czechslovakia, Germany, and the Soviet Union (cf. surveys in Dressler [Ed], 1978). However, much work in text linguistics was guided by the striving to uphold the same methods and theories set down in the formalist approach to *sentence* structures, including transformational grammar and logic (e.g. van Dijk, 1972, 1977a; Ballmer, 1975), whereas British discourse analysis was far removed from such an ambition. In clinging to the sentence, text linguists were in effect impelled to pursue a standpoint that seems to be just the reverse of the proper procedure. Consider this research program (van Dijk, 1977a: 190):

> The input [to pragmatics] are sentences (or discourses [sic!]) as specified in the syntax plus their semantic interpretation as given in the semantics. Such discourses are OBJECTS and as such cannot be called successful or non-successful. A first task of pragmatic theory, therefore, is to turn these objects into acts. In other words: what has been the abstract structure of the utterance-object must become the abstract structure of the utterance-act. It would be nice if the structure of the former could somehow be maintained in the structure of the latter, just as rules of semantic interpretation respect the categories of syntactic structure. The operation turning discourse into acts might be called a PRAGMATIC INTERPRETATION of utterances. A second task of pragmatics would then be to "place" these acts in a situation.

Nearly every statement in this program deserves the most vigorous protests. Discourses are not specified by the syntax, but by their *situation of occurrence*: they are already and always ACTIONS, not OBJECTS, and need no pragmatics to "turn them into" what they are, nor to "place" them in situations whence linguists had no right to remove them to begin with. Nor can the structure of discourse actions hope to "maintain" the structures of syntax and semantics, and it would not be "nice" to force them.

The most characteristic (and infuriating) touch here is the glibness with which van Dijk (who must know better) parenthetically suggests in his opening statement that the differences between a sentence and a discourse are not essential.

2.6 The merging of discourse analysis with text linguistics, as I have repeatedly advocated (Beaugrande, 1980a; Beaugrande & Dressler, 1981) would indeed mean a total re-orientation of priorities. The work of British scholars cited above (in 2.2 ff.) offers a more helpful framework than do abstract sentence grammars. But many new questions will have to be addressed. The sentence is obviously not the unit of discourse, as any recording of spontaneous conversation will show, though sentences do appear along with other surface formats. Thus, the question now is: what are the proper units of discourse (cf. discussion in Coulthard, 1977: 6 ff.), and how are they constructed and recognized?

2.7 The best unit seems to me to be the DISCOURSE ACTION (Beaugrande, 1980a, 1980c), a more general category than the conventional "speech act." Each such action alters the SITUATION in which it occurs. If the action predominantly depicts the situation, we have SITUATION MONITORING (e.g. a remark about the weather): if it predominantly guides the evolution of the situation, we have SITUATION MANAGEMENT (cf. Beaugrande & Dressler, 1981, for demonstrations). Each action may correspond to (or be a part of) a step in a PLAN to attain a GOAL; or it may be a reaction to an external event, but still with reference to one's plans and goals. As a default, we can assume that any goal is considered (or might be considered) DESIRABLE within a society. But these desires are always diffuse, changeable, and complex, and may compete with other desires (cf. Beaugrande, 1979b, 1980a, 1980c; Wilensky, 1980). Thus, the correlation between an action and one or more discourse goals will normally be much more elaborated than in the "performatives" of speech-act theory (where the utterance is the act and constitutes its own goal).

2.8 The relationships between actions and conceptual content (or, in old-style linguistics, between "pragmatics" and "semantics") always respond to the context of what is known or obvious versus what is unknown, new, or interesting. An action will either INVOKE, i.e. present established materials; or else INFORM, i.e. present new, unexpected, or variable materials; or will be a combination of the two with a DOMINANCE in one direction or another. The SITUATION MODEL maintained by each discourse participant must therefore contain not only the tracks for plans and goals, but also the anticipated background knowledge of other participants, e.g. what is common knowledge in a cultural community. The "negotiation" of one's meanings, as envisioned by Candlin (2.1), is carried out against the backdrop of this situation model. Notice that, given appropriate motivations, the conventions of "semantics" and "syntax" can be set aside, e.g. in poetic or fictional discourse, provided those motivations are convincing and the processing effort is rewarded (Beaugrande, 1979c). You can, for example, create new words or use known words in new senses, provided you make it clear what you are doing, e.g.:

> (6) "They gave it me," Humpty Dumpty continued [. . .] "for an un-birthday present."
> "I beg your pardon?" Alice said with a puzzled air.
> "I'm not offended," said Humpty Dumpty.
> "I mean, what _is_ an un-birthday present?"
> "A present given when it isn't your birthday, of course."
> (Carroll, 1960: 267)

2.9 In 1.12f., I aired the problem of making _prescriptive rules_ out of the formal patterns of discourse uncovered by special analysis. In a communicatively oriented discourse analysis, the dangers of such a practice are immediately evident: there are very few hard and fast _rules_ that relate one's actions or goals to _specific formal utterance patterns_. More often, a text producer faces a range of selections that, according to the circumstances, appear more or less _strategic_. Thus, though we cannot give to learners a set of _fixed rules_, we can provide _orderly decision-making criteria_ that accept a range of input and clarify the consequences of one's ensuing selections. The next section will offer some illustrations in terms of composition problems (cf. Beaugrande, 1982, for details).

3. Discourse analysis and composition

3.1 In recent work, I have undertaken to design a process model of writing (e.g. Beaugrande, 1981a, 1981b, 1982).[3] The model foresees a set of _processing stages_ that run mostly in _parallel_, though _dominance_ is continually shifted. These phases are: GOAL-SETTING (determining the purpose of the discourse), IDEATION (creating a general configuration of content to act as a _control center_), CONCEPTUAL DEVELOPMENT (specifying, qualifying, and interrelating ideas), EXPRESSION (correlating concepts and relations with language expressions), PHRASE LINEARIZATION (putting the expressions into syntactic formats), and SOUND/LETTER LINEARIZATION (executing the acoustic and graphic surface text). The justification of these stages was derived from the experimental literature on memory stores, attention, neuropsychology, and computational simulation of intelligent processing. Though this literature indicates that these five stages can be independently operated or affected, it also suggests that they routinely interact in cognition and communication of all kinds, thus including writing.

3.2 A major contributor to the difficulty of writing is the number of control factors that can bear on any selection of words, phrases, clauses, and so forth. In speech, such selections are frequently provisional, because the surface text decays from memory rapidly, and continuous production is expected throughout. In return, listeners also have the same limitations on memory and attention that speakers have, and so are normally tolerant of non-strategic choices, e.g. incomplete or inconsistent clauses, needless words, repetitions, and so forth. In writing, on the other hand, the text does not decay, and continuous production is not expected. In return, readers are normally much more aware of the surface text and correspondingly less likely to tolerate non-strategic selections.

3.3 The less skilled and experienced writers are, the more they will strive for continuous production and will tend to disregard the prior text as a valuable point or orientation. Even if they pause to consider and look back, they may be unable to bring to bear the criteria that should be weighed in making the next choice. Similarly, once the draft is on paper, they may not review and revise it adequately.

3.4 These difficulties are in part endemic to writing (and in part aggravated by the composition classroom, a situation in which writing must be done whether or not any clear goals and ideas have been set up). Researchers agree that writers only become aware of their intentions as they write (e.g. Emig, 1977; Odell, 1980; Wason, 1980). Some criteria for decision-making are simply not available at the opportune instant, and can be applied only in retrospect. Such a retrospect will be most effective only if the writer has some feeling for the most prevalent dangers.

3.5 I will adduce here only one illustration (cf. Beaugrande, 1982, for full details), namely word repetition. As I have argued elsewhere (Beaugrande, 1981b), the search process that selects words follows a kind of MENTAL GRID which stipulates the current requirements: goals, ideas, concepts, and phrase structure, that any word should satisfy. This search is often skewed by a memory tendency I have called REACTIVATION: a word (or other item) that has been used will be "primed"[4] and tend to pop up again, especially if it matches the current grid. Video-tapes of the act of writing allow me to watch writers creating and often revising repetitions in a variety of ways.

3.6 In the simplest case, the word recurs with the same sense, as in (I place material later crossed out in square brackets):

(7) Many people in today's society like football. I [[like]] enjoy playing and watching [[football]] this sport.

In a more complex case, the same word pops up with a *different* sense:

(8) The [[point]] object of the free-throw is to score an extra point.

Still more interesting is the case where the repetition makes the writer aware of a *contradiction*:

(9) I am interested in what [[horrifies us]] we enjoy being horrified by, in what we communally and voluntarily seek out to be thrilled by: I am not interested in what really [[horrifies]] frightens us.

The writer made a long pause before completing the latter phrase; his hand moved back to the first, crossed out "horrifies us" to put in "we enjoy being horrified by," and finally went back and finished with "frightens us." He realized that his own opening sentence had betrayed the very distinction he wanted to uphold between being *really* scared in *life* and *pleasurably* scared by a *film*. The word repetition triggered his realization, causing both revision and "elegant variation" ("frightens").

3.7 On occasion, a primed word can apparently *override* the grid and intrude where it doesn't fit at all. One version of (7) began this way:

(10) Many people in today's society like [[people]] football.

Perhaps the catch phrase from advertising about "people who like people" helped the intruder. But in some of my data, no such explanation readily offers itself. Interestingly, these reactivations normally respect the distinction between function words and content words: a member of one class does not displace that of another very much. Some samples of reactivation of this type which disrupt coherence are:

(11) These elements appear at the beginning [[at]] and ending of the story.
(12) The relation of an active [[an]] and a passive sentence
(13) The members of the group were angry [[of]] or frightened.

In each case, the writer overlooked the reactivation until later proofreading, and the conflated words are visually and acoustically similar, but the result didn't make sense.

3.8 We have seen that word repetition may be voluntary or involuntary, and may preserve or disturb coherence. Even a voluntary, nondisturbing repetition is likely to be irritating and dull, e.g. the original version of (7):

(7a) Many people in today's society like football. I like playing and watching football.

On the other hand, some repetitions are highly motivated, such as insisting:

(14) There are no distractions--and I mean no distractions. (Jeannie Morris)

or signalling that events are themselves repeated again and again:

(15) They work at it and work at it. (John Steinbeck)

or in creating symmetrical patterns that suit the message ("iconicity"):

(16) As in water face reflects face, so the heart of man reflects man. (The Bible)

3.9 My point here concerns the difference between a formal vs. a communicative discourse analysis. To the formal approach, word repetitions are simple "equivalences" and thus a sign of high integration (Harris, 1952). To the communicative approach, repetition may be nonstrategic (either boring or downright disturbing) or else motivated (enacting a specific meaning and purpose). Both types of repetition are favored by the reactivation mechanism in memory; but the writer needs to tell which cases should be combatted or removed, and which should not.

3.10 This example will have to stand for many. Composition courses have long suffered from a proliferation of "rules" that consulted only formal features or surface passages, but disregarded communicative motives. However, very few choices in writing entail a right vs. wrong distinction; most entail rather a gradation of more vs. less strategic. Only a discourse analysis that works on the latter assumption and explores the entire context of communicative interaction can therefore be of lasting benefit to the composition teachers and their students.

FOOTNOTES

1. In 3.5ff., I argue that there are motives for some formal equivalences, but that Harris's approach fails to sort them out in respect to discourse production.

2. The same ambition drifted into European text linguistics, which strove for a time to preserve most tenets of sentence linguistics (2.5).

However, the distinction of text vs. non-text is liable to be empirically intractable even more than that between sentences and non-sentences (cf. Beaugrande, 1980a, 1981c).

3. For similar process models, consult the papers in Gregg & Steinberg (Eds.) (1980).

4. A review of the experimental literature is given in W. Kintsch, Memory and Cognition (New York: Wiley, 1977).

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EMERGING NOTIONS OF HEURISTIC, ERISTIC, AND PROTREPTIC RHETORIC IN HOMERIC DISCOURSE: PROTO-LITERATE CONNIVING, WRANGLING AND REASONING

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According to the eighth-century B.C. epic poet Hesiod, man lost his divine inspiration for eloquence when Pandora lifted the lid of the jar containing the gods' gifts to men.[1] The righteousness of this act was justified as retribution for Prometheus's hubris in giving man the "technical" knowledge of fire.[2] More importantly, the result of Zeus's revenge was that man had to rely on the creation of his own "techne" or art and replace eloquence with a rationally construed imitation of the divine act of effective expression. For Pietro Pucci, author of Hesiod and the Language of Poetry, "Pandora introduces the exclusivity of human language. She speaks only human language and, therefore is the first human who can no longer speak the language of the gods, of which Homer knows some words and to which Hesiod alludes in Th. 837."[3] Pucci's phrase, "of which Homer knows some words" is a provocative phrase which hints at the very thesis of this study. To say that Homer's Iliad and Odyssey is a paradigm in the history of literature is to utter a commonplace. Its contributions to the history and development of writing and, in particular, rhetoric, have received far less attention. Although preceding the canonization of rhetoric as a formal discipline by centuries, the composing techniques of Homer were admired by such famous rhetoricians as Quintilian but were pointedly contested as appropriate for the study of rhetoric.[4]

The perspective mentioned above is not without opposition by contemporary rhetoricians. D.A.G. Hinks, in his essay "Tisias and Corax and the Invention of Rhetoric," claims that not only did the art or techne of rhetoric emerge in fifth-century B.C. Greece but that any examination prior to this period is "irrelevant to the proper history of rhetoric."[5] Yet, the composition of the Iliad and Odyssey has much to reveal about the epistemic development of rhetoric in a proto-literate culture. When the Iliad and Odyssey were composed in the latter half of the eighth-century B.C. Greece was in a twilight period of true oral literature, for although early Greeks rarely learned to read silently--in fact it is virtually unheard of in Antiquity--by the end of the seventh century B.C. the techniques of composing discourse exclusively for an oral medium were beginning to be replaced by developing scripts.[6] As the fifth century B.C. pre-Socratic philosopher Kritias observed, the "Phoenicians invented writing as aid to speaking."[7] So remarkable was the Greek development that I.J. Gelb claims that "the development of a full Greek alphabet, expressing single sounds of language by means of consonant and vowel signs, is the last important step in the history of writing."[8] Gelb's emphasis, however, is in the development of sign-systems and in that sense, not much new has developed in "the inner structural" development of writing.[9] Yet, if we consider the notions of and about discourse evidenced in Homer's work, if we examine what the proto-literate characters in the Iliad and Odyssey say and think about discourse, we may consider the Iliad and Odyssey the first important step in the history of writing and rhetoric.[10]

In brief, even the earliest Greek writing indicates an emerging awareness of the relationship between human thought and the processes by which such thoughts and sentiments can be symbolically expressed. There are three terms central to understanding the technai of ancient rhetoric: heuristic, eristic and protreptic discourse. Heuristic discourse is seen as a generative capacity to construe and apply some structuring of language. Eristic discourse is seen as advocacy for a particular point of view and is associated with contemporary notions of argument. Protreptic discourse is seen both as directive and didactic but associated with rational inquiry leading to dialectical knowledge. This essay examines the epistemology of dominant modes of Homeric discourse--heuristic, eristic and protreptic--and relates them to the notion of the divine "gift" of eloquence. Such an examination should warrant the claim that conceptual processes of discourse synonymous with the formalization of rhetoric in the fifth century B.C. were already emerging as human technai 300 years earlier and that the awareness of the evolution of these conceptual processes should provide a more accurate understanding not only of the history, and proto-history, of rhetoric but also an enriched understanding of the foundation of our discipline.

In order to realize the implications of this inquiry the three terms mentioned above need to be understood. The concept of "heuristic" or the discovery procedures for effective discourse, has been a major concern throughout the history of Greek rhetoric, as even a cursory reading of George Kennedy's The Art of Persuasion in Greece will reveal.[11] The importance of this notion was clearly apparent to Latin rhetoricians who labeled it "inventio" and gave it primacy among the canons of rhetoric.[12] In fact, Kennedy's recent article in Philosophy and Rhetoric demonstrates that the concept of heuristics was a central component to the Byzantine canons of rhetoric with Hermogenes' On Invention receiving great attention.[13] In contemporary research, readers need only leaf through W. Ross Winterowd's Contemporary Rhetoric to see the dominance given heuristics by Janice Lauer or more expanded treatment by Richard Young and Linda Flower.[14]

The term "eristic" came to be synonymous with argumentative discourse and received commentary from both Plato and Aristotle.[15] Eristics not only came to be considered the "art of disputation" but was used to label philosophers of the Megarian school who were noted for their argumentative mode of discussion.[16] Plato even came to label the techne of eristic discourse as sophistry.[17] Today the nature of eristic discourse is clearly a concern of rhetoric as Chaim Perelman and L. Olbrechts-Tyteca reveal in their New Rhetoric: A Treatise on Argumentation.[18]

Contrary to the notion of wrangling associated with eristics, protreptic discourse is seen as a didactic process whereby minds are "directed" in a horatory act for some instructive purpose.[19] Protreptic discourse was strongly encouraged for philosophy by Plato because it provides direction for thought leading toward knowledge.[20] This is particularly true when contrasted with the verbal ploys of misdirection characteristic of contemporary sophists, whom he so mercilessly lampooned in his Euthydemus as not caring if they "talk nonsense."[21] Plato is very clear in his belief that speech-writers who do not know the distinct technai of generating and employing argument will be severely constrained in their knowledge of the composing processes of discourse.[22] Their sophistic "art," Plato went on to say, is like a "wizard's art"; that is, "one involves a wizard's charming venomous spiders and scorpions and other wild beasts and evil things, while the other involves charming and persuading the ears of juries, assemblies and other mobs."[23] Plato's point clearly drives a wedge between the charm--and almost sensual enrapturement--of sophistic discourse and the philosophical inquiry toward knowledge characteristic of protreptic discourse. In brief, rhetoricians who engage in bantering eristic argument only provide a "ridiculous display of their particular effort" and should be overlooked when seeking didactic discourse associated with protreptic procedures.[24]

The concept of "heuristic" is present throughout the Iliad and Odyssey and is used as a verb to express some active process of discovery. Frequently, and as can be expected in this early use of the term, the notion of "heuristic" is presented in contexts which reveal some empirical and locative occurrence; that is, Homer freely uses the concept to indicate the discovery of persons, places, and gods.[25] Frequently this is done by an individual such as Athena "discovering" the "proud suitors" or Odysseus "discovering" the house of Circe, or Hector "finding" Archeptolemus.[26] In this sense, an heuristic capacity which expresses the notion of a physical event or entity is not discriminated by god or man; in fact, there is even a collective capacity to discover, such as in the statement "if we find a herd of oxen or a great flock" or an analogical sense attributed to discovery, as a lion would "discover" a deer or a wild goat.[27]

Homer, however, also attributes a psychological capacity for heuristic discovery not confined to sensory awareness and uses the term "heuristic" to discuss the capacity of subjective self-awareness. Often, this discovery is in terms of projected emotive responses not associated with "rational" self-consciousness, such as "and they discovered Myrmidons delighting his heart with a clear-toned phorminx [lyre]" or Odysseus who "discovered" himself sitting in the front hall of his home.[28] The use of "heuristic" in self-awareness and discovery is not limited to reflective self-consciousness. Homer often uses the term "heuristic" to indicate a potential capacity such as an optative construction to convey a desire for the future discovery of woes or joy and even a concept of the negative when they "did not find the gates boarded."[29] Evidence of the bridge between the physical and psychological sense of "heuristic" is evident in Homer's passage where the suitors "found the spirit of Achilles" in the sense of its representation as a physical form.[30]

All of the examples mentioned indicate mortal heuristic capacity for a range of power which extends from its use in the most physical sense to the most obtuse, futuristic modalities of subjective expression. This human techne for heuristics is central to understanding the inventive processes of the discovery and relationship of thought and discourse; that is, the human techne to discover and express complex thought and sentiments. Homer frequently discussed the power or human faculty of heuristic for discourse (heuremena dunamai) and several general modalities of heuristic processes are revealed.[31] Specifically, Homer discusses the human power to discover and contrive through words. Clearly evident is the idea of appropriate or suitable expression which can be "discovered." Nestor is characterized as being particularly sensitive to effective schemes for discourse and quick to point out shortcomings, as when he says, "For some time do we quarrel, nor do we have any capacity to discover any contrivance, for all our time here."[32] Nestor's criticism is a revealing one, for he expects his colleagues to demonstrate a faculty to discover some ability to devise a sign or technique through deliberation to resolve strife.[33] Language is viewed as an awareness to discover a solution to a problem. This discovery process can not only occur collectively among individuals but even in a self-dialogue, as when Odysseus "took counsel with myself" so that he could invent a solution to outwit the Cyclops.[34]

There is a clear association in Homer with the notion of a heuristic to discover a way and to compose those techniques into wily language. Odysseus, with his epithet of "many wiles" stands as an illustration of the human capacity to invent techniques to compose language. Examples of his conniving abound throughout Book Nine of the Odyssey but particularly revealing is the passage when Odysseus tries to discover some way to "compose all sorts of cunning [plots] and contrivances" when trying to deceive the Cyclops Polyphemus.[35] Odysseus is, in fact, lauded and proud of his ability to invent and compose devious discourse and is even told explicitly not to "conceal with crafty cunning what you really think but to speak up."[36] The notion of invented capacity of language as deception would be a central grounding for the epistemology of Gorgias's sophist rhetoric but the notion of language as a deception of reality invented through human capacity is evidenced centuries earlier in Homer.[37]

Homer's writing reveals a sensitivity to the human capacity to invent discourse and to compose or weave such language for effect. The modalities of this human capacity is present in two types of discourse, eristic and protreptic. The Homeric notion of eristic discourse frequently conjoins definiens and definiendum so that eristic discourse ceases to be a symbolization of thought and sentiment and collapses into the inherent power of the language. Eris or strife is a personification and can be god-induced.[38] It can also come into being as a result of discord or disagreement.[39] It is the human power to create strife through discourse which is particularly revealing here because Homer co-exists the notion of eristic with wrangling. The association of "strife and wrangling" (eridas kai neikea) occurs so frequently in Homer that it can almost be classified as formulaic.[40] According to Ben Edwin Perry, the frequency of such coordinating notions is not only characteristic of Homeric language but is a paratactic structure encouraging the "spontaneous absorption" of notions through a "strung-along style."[41]

The relationship of "strife and wrangling" is important to understand. This modality of style encourages an epistemic process of coexistence by taking dissociated concepts (strife/wrangling) and structuring a phenomenological unity. Strife can induce wrangling, as well as strife mixed with wine.[42] Yet, wrangling can also produce strife, as when Athena characterizes taunting words as a "reproachful attack," or when the suitors are told to "restrain your spirit from rebuke and blows, so that no strife or wrangling may appear" and they all "bit their lips."[43] "Winged words" are sent to the gods so that no violence can be caused when one is "burning on fire" with rage.[44] For Homer, the concept of wrangling holds no great esteem; in fact, his clearest view of the term is when he has Aeneas say, "to forcibly quarrel with strife and wrangling between us" is "like women who engage in bitter wrangling."[45] Clearly, such lowly prattle has no place in a Homeric man's world. In fact, Telemachus tells his own mother the queen that it is not her function but his--and that of men in general--to be the

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spokesperson of the home.[46]

Where strife comes violence can soon follow, and these notions apply directly to Homer's view of the eristic power of language. The clearest association with "strife and wrangling" is that violent thought leads to violent words and, eventually, violent deeds. Individuals are often told to curb their violent words so that strife and wrangling does not lead to blows.[47] Conversely, strife would continue if not for the power of words to thwart strife as when Homer writes that "strife would have [protrepicly] gone forward. . . had not Achilles spoken."[48] In brief, man has the power to generate strife through discourse, as do gods. Man has the power to resolve strife through discourse, as do gods. Man, like the gods, has the capacity to generate discourse which will create and mitigate violent words and create and mitigate violent acts of "strife and wrangling." Words can sting or be sweet and their power is often seen in terms of emotive and sensory responses; as when Odysseus says, "your speech has bit my heart."[49] Yet, discourse can have the capacity to check a "strong-hearted spirit" and induce "kindliness."[50] Words can have the capacity to "turn" or direct human thought in a way approaching rationalism rather than in strictly sensual terms, which leads to the Homeric notion of protreptic discourse.

To this point we can see that Homeric characters had some concept of inventional capacity to generate discourse but that this self-consciousness of their "heuristic" capacity produced discourse which was eristic, or emotive-based as well as emotive-directed, by arousing some sort of attitudinal disposition. A typical illustration of this capacity for language occurs when Odysseus is "heart-bitten" by discourse.[51] Similarly, Odysseus frequently mentions that an individual could or could not "persuade the heart within my breast."[52] We know, however, that when rhetoric was established as a formal discipline it not only give treatment to ethos and pathos but also to logos, the rational capacity to persuade other minds.[53] Certainly, any paper which argues for an emerging notion of rhetoric must inquire into the human capacity to structure discourse toward the "reasonable." There is, in fact, evidence to indicate that notions of reasonable discourse are to be found in Homer and this notion is characteristically seen in the concept of protreptic discourse.

As indicated earlier, Plato strongly opposed sophists who practiced eristic discourse but would not engage in the rational didactic techniques of protreptic discourse.[54] This concept of "protreptic" discourse occurs in Homer and provides insights into the awareness of a rational method "to turn and direct" or to go to a specific direction.[55] We know from Pucci that Hesiod had discussed the concept of false and true discourse, which he called respectively "crooked" and "straight."[56] Homer also has a concept of protreptic discourse as directional, and refers to yielding or betaking oneself willingly to do something.[57] Moreover, there is present in Homer the notion of a human capacity to generate "gentle" words to sooth the mind. Perhaps the most sensitive illustration of this phenomenon of protreptic discourse occurs in the Iliad when Alexander says, "I had a desire to direct my [thought] to sadness. And even now my wife sought to persuade me with gentle words."[58] By our present standards it is somewhat ironic that women, who are seen as having nothing whatsoever to do with the real power of discourse beyond "wrangling", are used to illustrate a capacity for rationality in time of stress.

Although the human heuristic capacity to discover discourse is evident in Homer as well as the potential to manufacture powerful eristic and reasonable protreptic discourse, it should not be forgotten that these are emerging, and even primitive, epistemological notions of discourse. To appreciate this perspective we should reflect on the ability to produce genuine eloquence. There is little doubt that in Homer, eloquence is god-produced and god-given. As is evidenced in Hesiod's account of Pandora, Zeus gave, and later took away, divine speech.[59] Yet to say that Zeus completely took away divine speech would be imprecise and not account for Hesiod's statement that both he and Homer knew "a few" divine words.[60] Despite man's limitations to struggle with the development of his own techne, there is evidence of what E.R. Dodds calls "psychic intervention."[61] Individuals who are eloquent are seen as having a gift from the gods and themselves are "god-like."[62] This divine gift from the gods is reserved for two categories of humans. The first group is royal or god-descended and god-blessed. Nestor, the king of Pylos, is the model of eloquence in Homer.[63] Yet, Odysseus, the King of Ithaka, is viewed not only as wily but eloquent, as is indicated in the Iliad when Homer says, "But when he [Odysseus] put forth his great voice from his breast, as like a snow storm in the winter, then indeed could no mortal man quarrel with Odysseus and then indeed did we wonder to behold his image."[64] Lastly, the "hero" of the Iliad, Achilles, is not only god-born but has been raised in a kingly fashion so that he can be "a rhetor of speech and a doer of deeds."[65] Of great importance here is the use of the term "rhetor," for it is the earliest and only known instance in which the term is used by Homer throughout the entire Iliad and Odyssey. It is a provocative point to historians of rhetoric that this earliest notion of the term which would be the basis for the founding of the discipline of rhetoric centuries later is now clearly associated with the god-blessed hero Achilles.

The other group of individuals in the Iliad and Odyssey who have the capacity for eloquence are the aoidoi or the bards who "weave" or compose chants of heroic tales to honor the gods. The sixth-century B.C. lyric poet Pindar considered "aoidoi" to be "weavers of chants."[66] Aoidoi are invariably given the epithet "divine" or "god-like" aoidoi who receive their power of eloquence from Zeus.[67] These composers of discourse are the pioneers of the techniques of oral literature and evolved into the formal guild of rhapsodes who are discussed in Plato's Ion.[68] The honor which Homeric aoidoi received from both the populace and Muses is personified in the characters Demodocus and Phemius.[69] The mission of aoidoi, and their later descendents, the rhapsodes, in orally preserving the texts of heroic tales, of which the Iliad and Odyssey are the most famous, would lead to a development of expertise to such an extent that they would become both the "linguistic guardians" of the proper pronunciation of the Homeric dialect as well as the compilers and transmitters of the written codification of Homeric literature initiated in the 6th century B.C. during the "Pisistratean Recension," from which we have our present-day text of Homeric tales.[70] It was during this period which rhapsodes developed written compositional techniques to preserve by script the collection of Homeric words and grammar which was becoming increasingly rare and, consequently, difficult to pronounce.[71] So established did these compositional techniques become that by the fifth-century B.C. private texts of Homer were known to have existed in Athens.[72]

In perspective, a number of observations can be made. First, the earliest Greek literature known indicates that there was an awareness among the characters of the Iliad and Odyssey of heuristic processes which could be used to develop human technai to produce discourse. Secondly, this discourse had power. The power was man-made but it could produce emotive effects and resolve discord and strife through a conceptual, eristic discourse. Third, there is some evidence that a more "gentle" or rational way could be found through the structuring of protreptic discourse to turn or direct the mind and sooth emotions. Lastly, man could be eloquent but the gift was god-given inspiration available to the chosen few. Although women could wrangle and produce strife, they could not be eloquent or even wiley in their discourse--they merely had to content themselves with being reasonable.

The implications of these points are important for the history of rhetoric. It is clear by Homer's tales of a proto-literate, Bronze Age culture that conceptual processes were being formulated for the structuring and understanding of discourse. There is an awareness of the potential of this power and even an indication of the relationship of thought and discourse. More importantly, with this consciousness there is an emerging shift from a theocentristic notion of discourse to more of an anthrocentristic notion of discourse. Even at this early stage of development human _technai_ for the structuring of discourse were being developed. As the sophistication of this knowledge grew both in the refinement of epistemologies which have given the classical period of Greece such fame, and with the compositional techniques of oral and written discourse which would lead to the development of the discipline of rhetoric, the supremacy of the gods as the generating force of effective expression would be challenged to the extent that words and arguments could be composed by sophists so "powerful" that they could defy the very existence of the gods who had once been attributed with giving them their divine power. To Zeus, it may have been better if Pandora had not opened the lid of that jar in the first place.

FOOTNOTES

1. Hesiod, _Erga_, 90-105.

2. Richard Leo Enos, "Review of Pietro Pucci, Hesiod and the Language of Poetry," Rhetoric Society Quarterly, 10 (Winter 1980), 39.

3. Pietro Pucci, Hesiod and the Language of Poetry (Baltimore and London: The Johns Hopkins University Press, 1977), p. 91.

4. Quintilian, Institution oratoria 10. 1. 46 passim. George Kennedy, "The Ancient Dispute Over Rhetoric in Homer," American Journal of Philology, 78 (1957), 23-35.

5. D.A.C. Hinks, "Tisias and Corax and the Invention of Rhetoric," Classical Quarterly, 34 (1940), 61.

6. G.S. Kirk, The Songs of Homer (Cambridge: Cambridge University Press, 1962), p. 314; Kirk, Homer and the Epic (Cambridge: Cambridge University Press, 1965), pp. 1-32, especially pp. 3, 10; W.B. Stanford, The Sound of Greek: Studies in the Greek Theory and Practice of Euphony (Berkeley: University of California Press, 1967), p. 1, n. 4 et passim; George Kennedy, The Art of Persuasion in Greece (Princeton: Princeton University Press, 1963), p. 4; Kirk, Homer and the Oral Tradition (Cambridge University Press, 1976), pp. 19-39.

7. Kritias, "Poetische Fragmente," 88. B2, Die Fragmente der Vorsokratiker, ed. Hermann Diels and Walther Kranz, zweiter band (Dublin: Weidmann, 1972).

8. I.J. Gelb, A Study of Writing, revised edition (Chicago and London: The University of Chicago Press, 1974), p. 184.

9. Gelb, A Study of Writing, p. 184.

10. This is a point which Otto Jespersen immediately establishes

in his classic treatise: *Language: Its Nature, Development and Origin* (London: George Allen and Unwin Ltd., 1964), p. 7. For essays which discuss the relationship between Homer and the development of rhetoric, see: George Kennedy, "The Ancient Dispute Over Rhetoric in Homer," *American Journal of Philology*, 23-35; George Kennedy, "Review Article: The Present State of the Study of Ancient Rhetoric," *Classical Philology*, 70 (1975), 280; James J. Murphy, "The Origins and Early Development of Rhetoric," in *A Synoptic History of Classical Rhetoric* (New York: Random House, 1975), pp. 3-4.

11. Kennedy, *The Art of Persuasion in Greece,* p. 10 *et passim*.

12. [Cicero], *Rhetorica ad Herennium*, 1. 3 *et passim*; Cicero, *De Inventione passim*.

13. Kennedy, "Later Greek Philosophy and Rhetoric," *Philosophy and Rhetoric*, 13 (Summer 1980), 185-189. *Cf*. George L. Kustas, *Studies in Byzantine Rhetoric* (Thessaloniki: Patriarxikon Iaryma Paterikon Meleton, 1973), p. 42, note.

14. Janice Lauer, "Heuristics and Composition," in *Contemporary Rhetoric: A Conceptual Background with Readings*, ed. W. Ross Winterowd (New York: Harcourt Brace Jovanovich, Inc., 1975), pp. 79-90; Richard E. Young, Alton L. Becker, and Kenneth L. Pike, *Rhetoric: Discovery and Change* (New York: Harcourt, Brace and World, Inc., 1970), pp. 120-121; Linda Flower, *Problem-Solving Strategies for Writing* (New York: Harcourt Brace Jovanovich, Inc., 1981), pp. 43-45.

15. Plato, *Euthydemus* 272C; *Lysis* 211B. Aristotle, *Rhetorica*

1371a, 1402a.

16. Diogenes Laertius 2. 134.

17. Plato, _Sophista_ 231E, 225C.

18. Ch. Perelman and L. Olbrechts-Tyteca, _The New Rhetoric: A Treatise on Argumentation_, trans. John Wilkinson and Purcell Weaver (Notre Dame: University of Notre Dame Press, 1971), p. 37.

19. Stephen Skousgaard, "Genuine Speech vs. Chatter: A Socratic Problematic," in _Plato: True and Sophistic Rhetoric_, ed. Keith V. Erickson (Amsterdam: Rodopi, 1979), pp. 379, 380. Kustas, _Studies in Byzantine Rhetoric_, p. 49, note.

20. Plato, _Euthydemus_ 278C,D; 288D,E; 282D.

21. Plato, _Euthydemus_ 288B, see also 277D,E; 278B,C.

22. Plato, _Euthydemus_ 289 D,E.

23. Plato, _Euthydemus_ 289E, 290A.

24. Plato, _Euthydemus_ 307B, see also 307A-C.

25. Homer, _Iliad_ 5. 169; _Odyssey_ 10.252; _Iliad_ 24. 98.

26. Homer, _Odyssey_ 10. 210; _Iliad_ 8. 127.

27. Homer, _Odyssey_ 12. 300; _Iliad_ 3. 24.

28. Homer, _Iliad_ 9. 185-186; _Odyssey_ 14. 5.

29. Homer, _Odyssey_ 9. 535; _Odyssey_ 13. 43; _Iliad_ 12. 120-121.

30. Homer, _Odyssey_ 24. 15.

31. Homer, _Odyssey_ 4. 374, 467; _Odyssey_ 19. 157-158.

32. Homer, _Iliad_ 2. 342-343.

33. Homer, _Odyssey_ 12. 393; _Odyssey_ 19. 157-158; _Iliad_ 16. 472.

34. Homer, *Odyssey* 9. 421-423.

35. Homer, *Odyssey* 9. 421-423; see also, *Odyssey* 9. 19-20, 33.

36. Homer, *Odyssey* 8. 548-549.

37. Diels and Kranz, *Die Fragmente der Vorsokratiker*, 82. Bll. 6, 8, 11, 14. Richard Leo Enos, "The Epistemology of Gorgias' Rhetoric: A Re-examination," *Southern Speech Communication Journal*, 42 (Fall 1976), 49-50.

38. Homer, *Iliad* 4. 440; *Iliad* 5. 518, 740; *Iliad* 11. 3, 73; *Iliad* 18. 535; *Iliad* 20. 48. *Odyssey* 3. 136, 161.

39. Homer, *Iliad* 20. 55. *Odyssey* 6. 92; *Odyssey* 3. 136; *Odyssey* 20. 267.

40. Homer, *Iliad* 2. 376; *Odyssey* 20. 267.

41. Ben Edwin Perry, "The Early Greek Capacity for Viewing Things Separately," *Transactions of the American Philological Society*, 68 (1937), 410-418, especially 412.

42. Homer, *Odyssey* 19. 11.

43. Homer, *Iliad* 1. 210-211. *Odyssey* 20. 266-268.

44. Homer, *Iliad* 21. 359-361, 368; see also, *Odyssey* 2. 269.

45. Homer, *Iliad* 20. 251-255.

46. Homer, *Odyssey* 1. 356-359.

47. Homer, *Iliad* 1. 210; *Odyssey* 19. 11; *Odyssey* 18. 13; *Odyssey* 20. 266-267.

48. Homer, *Iliad* 23. 490-491.

49. Homer, *Iliad* 1. 247-249; see also *Odyssey* 8. 183-185.

50. Homer, Iliad 9. 255-256.

51. Homer, Odyssey 8. 185.

52. Homer, Odyssey 9. 33.

53. Aristotle, Rhetorica 1356a.

54. Plato, Euthydemus 288B-D, 272B-C, 289E, 290A, 278C,D.

55. Homer, Odyssey 11. 18; Odyssey 12. 381.

56. Pucci, Hesiod and the Language of Poetry, pp. 45-49.

57. Homer, Iliad 5. 700; Iliad 6. 336.

58. Homer, Iliad 6. 336-338.

59. Hesiod, Erga 90-105. Friedrich Solmsen, "The 'Gift' of Speech in Homer and Hesiod," Transactions of the American Philological Association, 85 (1954), 1-15.

60. Hesiod, Theogenia 837. Pucci, Hesiod and the Language of Poetry, p. 91.

61. E.R. Dodds, The Greeks and the Irrational (Berkeley: University of California Press, 1973), p. 5.

62. Homer, Odyssey 8. 165-185.

63. Homer, Iliad 1. 247-249.

64. Homer, Iliad 3. 221-224.

65. Homer, Iliad 9. 443.

66. Pindar, Nemean Odes 2. 1,2.

67. Homer, Odyssey 1. 325-349; Odyssey 8. 43, 47, 87, 539; Odyssey, 9. 3,4.

68. Plato, Ion passim.

69. Homer, Odyssey 1. 154; 8. 65-67; Odyssey 13. 27-28. Richard

Leo Enos, "The Hellenic Rhapsode," Western Journal of Speech Communication, 42 (Spring 1978), 136.

70. For views on the Pisistratean Recension see: Enos, "The Hellenic Rhapsode," Western Journal of Speech Communication, 136-141; Lycurgus, Contra Leocratem 102; Cicero, De Oratore 3. 137. Cf. Plato, Hipparchus 228B; Diogenes Laertius 1. 57; T.W. Allen, "Pisistratus and Homer," Classical Quarterly, 7 (1913), 40, 48, 49; Josephus, Contra Apionem 1.12; G.S. Kirk, The Songs of Homer, pp. 312, 317. For a more contemporary view on the Pisistratean Recension see: Rudolf Pfeiffer, History of Classical Scholarship: From the Beginnings to the End of the Hellenistic Age (Oxford: Clarendon Press, 1971), pp. 6-7.

71. Enos, "The Hellenic Rhapsode," Western Journal of Speech Communication, 140-141.

72. Xenophon, Symposium 3.6; Memorabilia 4. 2. 10.

EVALUATION IN THE WRITING CONFERENCE: AN INTERACTIVE PROCESS

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Today, I will examine the evaluation of student writing from the point of view of the teacher rather than from the point of view of the tester. I will ask what role evaluation plays in the effective teaching of writing. Past studies of teachers' written comments indicate that they generally do not provide much specific help for the student writer. Harris (1977) reports that teachers say they value content and organization over sentence structure and mechanics, but that they focus most of their written comments on issues of mechanics. Sommers (1981) also reports that most teacher comments focus on mechanical issues and that their other comments are vague and often send confusing or contradictory messages to students.

I will report preliminary results of a pilot study on evaluation in the student-teacher writing conference. I found that in the conference, evaluation, broadly defined, plays a significant role in teaching. In the conference, evaluation occurs in the following guises:

1. Teachers guide students to evaluate their own writing (self-evaluation). Such evaluation might occur in the conference itself and because of what happens in the conference, self-evaluation should become a more productive, more regular part of the student's composing process.

2. Teachers and students evaluate the writing process as well as

the written product.

3. Teachers give substantive, formative evaluation throughout the writing process as well as summative evaluation or a grade once the product is complete.

Conferences are an increasingly popular pedagogical setting for teaching writing. Indeed, at all levels of teaching writing, from elementary school through college, the conference is becoming more and more widely recognized as a central, if not the central, teaching event (Garrison, 1974; Blenski, 1976; Graves, 1980; Carnicelli, 1980). Evaluation defined as student and teacher response to the writing process and the written product is explicitly at the center of the pedagogy of the conference. As I said earlier, my goal in studying evaluation in the conference was really to study teaching. I chose to focus on the conference setting not only because it is a common and potentially very productive teaching setting but also because it involves only two participants, not a teacher and a class, just a teacher and a student. I felt that in the type of conference in which the student participates a great deal in the conversation, I would be able to analyze parts of the learning process and to see how learning and teaching interact. So I trained the teacher in my study to give coherent conferences in which the student played a significant role. As Ellen Nold (1981) argues, for conferences to be effective, the talk must not be dominated by the teacher and the conference must be coherent.

As a setting for teaching writing, the conference, I felt, held the most potential as a place where effective teaching and productive learning would occur. The student could understand the teacher's meaning more easily; the communication is oral rather than written as it is when a teacher writes comments on a student's paper, and the oral conversation is only between two participants, unlike in the classroom where the teacher must attempt to communicate with many students at once. Therefore, I felt that this simpler communication situation, oral and one-to-one, held the most potential to be a productive learning situation; at least one in which the student would best be able to understand the teacher.

By studying the conference, I hoped to be able to trace how students changed across time: how they changed their writing, whether or not changes were related to talk in the conference. I also wondered how their conversations with their teacher changed--conversations both about their written products and about their writing process--and whether changes in talk would give clues about learning. I wondered whether conferences differed with weak and strong students and whether the type and amount of change differed for these students.

I began my study of conferences by looking at one teacher and her conferences with six different students across a semester's time. There were four conferences with each student, and all conferences took place as part of the natural course of instruction in a freshman writing class at San Francisco State University. Half of the students had low verbal ability (below 350 SAT-V) and half higher (above 500 SAT-V).

First, I will sketch briefly the analysis system and then I will compare the second conference of the semester for one of the weaker and for one of the stronger students in class. Finally, I will explain how the weaker student's main concern, about her grammar errors, develops through the semester and how her teacher responds to this concern.

To analyze the conference discourse, first two trained coders independently label the conversational "turns" in each conference (Sachs, Schegloff, & Jefferson, 1974; Freedman, 1980). By labeling turns, I am able to quantify the amount of talk during certain conversational sequences and to locate those sequences exactly in the data.

I chose the topic of conversation, a semantic concept, as the basic unit of analysis. Most past studies of oral discourse have had a structural rather than a semantic focus. For example, classroom language studies have uncovered structural units, such as Mehan's (1979) initiation-reply-evaluation sequence. Others, like Austin (1962) and Searle (1969), have examined speech acts, such as commands and pronouncements, questions and requests. Just as Mehan does not consider the substance of the reply, speech act theorists do not deal with the substance of the command or question.

Although a structural analysis of conference-talk is enlightening (Freedman, 1980), I felt that it would be useful also to organize the data into topics, to discover systematically what the key topics are. I felt that an identification of topics would prove useful in tracing the teaching and learning process. For what one teaches, the substance of the curriculum, the topics one covers, is just as important as how one structures the teaching. By analyzing topics, I hoped to discover how the teaching and learning process changes across time (do the central topics of conversation shift?), to see how conferences with different students vary (does the teacher talk about different topics with different students?), and to form hypotheses about student writing, about what the student might do as a result of the conference (will the student develop a paper more fully after a long conference conversation about development?). After outlining what the topics of conversation are, I next explore the speech acts and other finer workings of the conversation within the key topics, to find out how the teacher teaches and how well the student understands.

My system for dividing the discourse into topics follows from two strains of past research: oral discourse analysis that mentions the importance of topic, and text analysis which organizes written texts and sometimes monologues into a hierarchy of propositions, akin to what I am defining here as topic. In oral discourse analysis, Mehan (1979), in his recent study of social structure of the classroom, found that as a teacher elicits information from students during the initiation phases of the instructional sequence, the "elicitation sequences are organized into larger units. And these units seem to be organized around topics" (p. 65). He calls these larger units "topically related sets." Chafe (1980), in his analysis of the "idea units" in story recalls, found that idea units could be grouped into larger units called "centers of interest." Sachs (1971) cited in Coulthard (1977) shows that topics of conversation drift from one to the next in a linear fashion.

Text analysts, like Kintsch (1974), Fredericksen (1975), and de Beaugrande (1980), on the other hand, have organized propositions or meaning units into hierarchical arrangements with some propositions subordinate to others. Likewise, I have found that topics in the conference are arranged hierarchically. My analysis system captures both the linear and hierarchical arrangement of topics and takes for a topical unit something akin more to Chafe's "center of interest" than to his single "idea unit" or to the individual proposition.

The main topical segments of discourse at the top of the hierarchy of topics suggest the major divisions for the conference. In Table 1 you can see how the boundaries between these major level 1 segments are marked in the discourse for one student conference. In this conference, there are four level one segments: this paper, Jean's (another student in the class) paper, general writing concerns, closing remarks. The next level topics also structure the conference by signaling the activity that is occurring: student self-evaluation, paper reading, teacher evaluation, and the like. Here, in order to examine the finer interactions between student and teacher, I will focus on the hierarchically lower level topics. For example, during the student self-evaluation event, talk may focus on such lower level topics as development of ideas, mechanical errors, or the student's insecurity as a writer.

From an analysis of several conferences, the lower level topics

TABLE 1

OPENINGS AND CLOSING OF MAIN CONFERENCE SEGMENTS

Opening		
SEGMENT 1		
THIS PAPER	T1:	How did you feel about this paper?
	S1:	Horrible
	T2:	You did?
	S2:	Well, see
		it was a rush job I did the night before it was due.
		.
		.
Closing		.
SEGMENT 1		.
	S115:	I guess it (this paper) wasn't that bad then.
	T116:	Nuh huh.
		No.
		It wasn't.
		It wasn't.
	S116:	I feel like I was going to get a "D" or an "F."
	T117:	Oh no.
		Oh no.
	S117-1:	That's how much confidence I have in myself.
Opening		
SEGMENT 2		
JEAN'S PAPER	S117-2:	And like Jean,
		when she received her essay,
		she couldn't believe she received an "A-,"
		and she told me to read it
		and I read it,
		and it was good
	S117-3:	and as you said
		it needed more development
		.
		.
Closing		.
SEGMENT 2		.
	S118-2:	and she had trouble spelling,
		uh, the,
		some of the words.
	S118-3	She says,
		"Why are you so picky?"

I said,
"I guess I'm like that."

Opening
SEGMENT 3
MY WRITING
CONCERNS

S118-4: Because I tend to look at things carefully
and want to have it right.
T119-1: That's good, though.
T119-2: That's good
because if you have a lot of technical errors
/uh hum/
even if you have good ideas
.
.
.
.

Closing
SEGMENT 3

S139-2: Do you have the sheet,
one day I wasn't there,
it was on a Wednesday,
about your correction symbols?
.
.
.
.
T145: These are the ones
that I put on papers
when, uh,
/uh huh/
you get an,
an essay marked
when it comes back to you
/okay/
without talking to me directly about it.
S145: Okay.
Yes,
there are some new marks
that I don't know about.
T146: Yeah.
S146-1: Okay.

Opening
SEGMENT 4
Closing

S146-2: Well,
thank you very much.
T147: You're welcome.
.
.
.
.

Abbreviation Key:
T = teacher
S = student
numbers after T and S = conversational turn (defined by Sachs, Schegloff, and Jefferson, "A Simplest Systematics for the Organization of Turn-taking for Conversation," Language, 50 (1974), 669-735.)
subdivisions of turns made when topic shifts within a turn

Level II

List of Level II events under first Level I (Segment 1: THIS PAPER). All Level II events are subordinate to a Level I segment.

1. Student self-evaluation--teacher initiated

OPENING: T1: How did you feel about this paper?

2. Read paper (continue self-evaluation in a slightly different context from above)--teacher initiated

OPENING: T38: Okay
Why don't, uhm,
just so that we're both real familiar with it
why don't you just quickly read through it
and then if there's any other points that you want to make about the essay
uhm
S38: Okay
T39: Go
feel free to stop and analyze it with me
you can read it out loud if you want

3. Teacher evaluation--teacher initiated

T65-2: You um,
this is uhm
a very strong essay
Uhm
I was pleased with it when I saw it.
Uhm,
you have a real clear thesis

4. Grading--teacher initiated

T108-7:	But as far as a grade for an essay like this, I think it's a, in the B range and I would uh give it a B-

5. Return essay--student initiated

S109-2:	Uhm when when am I going to get this essay back?
T110:	Right now.

listed and defined in Table 2 have emerged. Each topic in the first group (1-5) can be discussed mainly in terms of the writing process, mainly in terms of the written product, or in terms of both the process and the product, each orientation considered a separate topic. For example, I treat a discussion of development of the product as a separate topic from a discussion of development during the process or idea generation, invention. When the discussion of the process merges with the discussion of the product, I code the topic as a process topic and as a product topic.

In Table 2, I have given a brief definition of each category, and I have given examples of conference-talk that I label product orientation, process orientation and a mixture of the two. For an example of a product orientation, notice Cee's, the weaker student's, discussion of her mechanics (#5).

Cee says, "And I feared there was a lot of little errors here and there and like I was reading my own copy about 15 minutes ago to see how it was, and there are a few errors I found that should have been corrected before." Here, even though Cee mentions that she notices her errors while going through the process of reading her paper, Cee is looking at her finished product, which incidentally she does not change even though she recognizes that it contains errors. She tells the teacher a fact that she knows about her product. She does not discuss either her process of creating her errors or her process of correcting the errors.

TABLE 2

Lower Level Topics (Process and/or Product)

1.	Argument-	a)	interpretation of ideas
		b)	logic
		c)	clarity
	Example:		
	S 17-1:		Then I went over from all this
	(Jay)		and wrote down little statements
	Process		about what my assumptions were.
2.	Development-	a)	generate ideas
		b)	add ideas
		c)	delete ideas
	Example:		
	S 1-2:		I went to do the final draft
	(Jay)		and I realized I could do better.
			You know,
			even slightly
	S 1-3:		but just adding things on
	Process		more de-development
	Product		It's a big thing.
3.	Organization-	a)	order ideas
		b)	paragraph
		c)	transition between ideas
		d)	set up thesis statement, topic sentences to mark organization clearly
	Example:		
	S 17-2:		And then I put all my complaints in little categories
	(Jay)		that sort of fit together
	Process		
4.	Sentence style-		
	(not errors)	a)	join sentences
		b)	vary sentence structure
		c)	make sentence focus concrete
	Example:		
	S 56-3:		Uh
	(Jay)		I don't know if it is right to say bus operator in one sentence
	Product		and bus driver in the next
			(Unclear) variety.

5. Mechanics-
    - a) verb tense
    - b) reference
    - c) punctuation
    - d) spelling
    - e) capitalization

Example:

S 3-2: And I feared there was a lot of little errors here and there
(Cee) and like I was reading my own copy about 15 minutes ago
Product to see how it was
and there are a few errors I found
that should have been corrected before.

Process (Note: "invention" or "idea generation" falls under process of development)

6. Revision
Example: see first part of example #2

7. Transcription
Example:

S5: . . .
(Cee) but getting the ideas out
and putting out on the paper was hard to do.

S 7-2: I had a lot of ideas running through my mind
(Cee) but when I finally got to the nitty gritty
writing things down was hard.

Number 3, organization, shows a discussion of Jay's which is process-oriented. Jay, the stronger student, describes his organizational process for the paper under discussion: "And then I put all my complaints in little categories that sort of fit together." Here, obviously, he does not comment on the organization of his written product.

Number 2, development, exhibits a discussion in which Jay is referring to his process and his product. "I went to do the final draft and I realized I could do better, you know, even slightly but just adding things on more de-development. It's a big thing." At this point Jay is discussing his discovery of his lack of sufficient development in his draft. Jay's discovery is much like Cee's discovery that she had "errors. . . that should have been corrected before." However, Cee makes apologies for what she considers her final product and does nothing about her discovery. Jay, on the other hand, describes a discovery he made when he went to do his "draft"; and he implies here and later indicates that his discovery led him to make changes before he typed his version that he has just presented to the teacher. So Jay's topic of development concerns a discovery that he made during his writing process and results in a change in his final product.

The last couple of topics, 6 and 7--revision and transcription--can only be process topics. However, these topics may accompany other process or product topics. In fact, in the example under number 2, before Jay discusses development, he discusses his revision process:

"I went to do the final draft and I realized I could do better. You know even slightly."

Besides the topics listed in Table 2, I have found that frequently during a conference several topics will surface that are peculiar to a particular student and that are not necessarily related to the written product or the writing process. Such topics, in fact, may or may not influence writing. An example of such a topic is Cee's distrust of teachers which surfaces during her first conference of the semester.

An analysis of these lower level topics of conversation can reveal systematically how the substance of different conferences differ. By using such an analysis, I can address those questions that bear on the teaching and learning of writing: does the teacher discuss different students? Do the student's and teacher's topics of discussion change across time? Do the topics of conversation shift in ways that indicate that the student is making progress?

Next, I will compare the topics of discussion in the second conference of the semester for Cee, the weaker student, and for Jay, the stronger student. In Table 3, I have grouped for each student, the topics from the second conference of the semester into categories, according to whether they were initiated mostly by the teacher, mostly by the student, or more or less equally by both the teacher and the student. In an earlier analysis of this data, I showed that students have main concerns in a conference which they express over and over again to their teachers much like psychiatric patients in talks with

TABLE 3

Topics

	Jay (stronger student)	Cee (weaker student)
Teacher Topics	***organization (product) argument (product) revision (process) sentence style (product) mechanics (product)	**development (product) *argument (product) organization (product)
Student Topics	*development (process)	**mechanics (product) transcribing (process)
Student and Teacher Topics	**development (product) argument (process) organization (process)	development (process) revision (process)

*** - topic initiated most

** - topic initiated second most

* - topic initiated third most

their psychiatrists repeat their main concerns over and over again (Freedman, 1979; Freedman, 1980). With the current analysis system, I account for repeated teacher concerns as well as repeated student concerns.

Those topics that are starred in the chart on Table 3 are the topics that were mentioned more times than any others during the conference, the more stars, the higher the number of mentions. The number of different mentions does not necessarily correspond to the proportion of conference time devoted to a given topic. As a matter of fact, in Cee's conference the student keeps bringing up her concerns with mechanics but the teacher is not very interested in pursuing this topic. So the teacher works to keep the focus off of mechanics by trying to shorten the discussion on this issue; thus, in order to be able to talk about her mechanics, Cee must keep bringing the issue up. I plan to calculate the amount of time spent on these topics to supplement this information about the number of times the topic is brought up for discussion. But I do not yet have these calculations.

Most interesting is the difference in the substance of the topics and the difference in who brings up which topics for the two students. Based on the topics the students initiate, one can see that the students are clearly concerned with different issues. Jay has problems generating ideas. He is not at all concerned with mechanics. In an earlier conference he mentioned that in high school he once did very poorly in an English class because he did not turn in a paper because he couldn't decide what to include in it. Even for the paper under discussion at this conference, he went to see the teacher earlier during his writing process to get help generating ideas. And still, during this conference, idea generation is the one topic that Jay wants most to discuss. Furthermore, with the teacher, Jay explores the effectiveness of his idea generation on the development of his product, a separate topic but a related concern. In Jay's conference, the topic most initiated is one by the teacher, on the organization of the product. She brings up a new problem for him to consider.

In Cee's conference, on the other hand, it is a student topic, mechanics, rather than a teacher topic, that receives the most mention. The other two topics that receive a lot of focus are both teacher topics: development of the product and the clarity of the argument. This teacher focus on the clarity of Cee's ideas is a topic that logically should precede talk about the organization of the ideas, something the teacher is able to cover in Jay's conference but not in Cee's. The teacher's concern with development carries across both conferences.

The substance of Cee's concern with mechanics and the way the teacher interacts with Cee to handle this concern raise some interesting pedagogical issues. In Table 4 I trace Cee's concern with mechanics across the semester. Cee first articulates this concern early during her first conference of the semester. Later during this first conference Cee and the teacher discuss how Cee's concern with mechanics affects or really blocks Cee during her writing process. In A on Table 5 Cee says,

TABLE 4

Cee's Developing Concern about Mechanics

A. Conference I--Cee admits the effect of her concern with error on her process and product

S: See I saw a lot of things when I was doing the rewrite.
But I just couldn't put it down into words.

T: Um, that's interesting.
Did you make any, uhm
kind of outline on the side
trying to get your ideas plugged into an organization?

S: Uhm hum.
But it just didn't work.
I wrote a few things that aren't complete sentences.
That's the problem.
See if I thought they were complete sentences,
I would of probably put them in the essay.

T: Oh,
I see.
So you took out some of your examples because you felt that the writing,
it was a fragment rather than a complete sentence.

S: Uh hum.

T: Okay,
so sometimes you avoid writing certain ideas?

S: Uh hum.

T: Because you're afraid that the unit isn't a complete thought.

S: Right.

T: Okay.
That's interesting.
That will make a big difference in your writing so that
yeah, uhm,
its important that,
that you get that confidence in your writing
so that you can incorporate ideas.

S: Right.

T: and develop your ideas.

B. Investigator-Student Interview--early in the semester. Cee describes her strategies.

S: Writing out chunks
and in different orders,
no matter what
and then I start working on some of them,
on one idea
and start developing
but it's kinda hard to develop one point.

I: Cee, when you're writing all this stuff down in chunks,
do you worry about how you're writing it down?
Do you worry about your grammar and your sentence structure then?

S: I worry about it then
because I want to make it perfect at the beginning.
That way I won't have to worry in the middle or at the end.

C. Conference III--Cee reveals another way her problem with mechanics hinders her composing.

S: Well,
see,
I had things running through my mind then,
Oh, I'm going to write that down.
Then when I start to write it down
it doesn't come out the way I was thinking about it.
And it comes out all awkward
and I try to get it back
what I thought of before,
but then I can't think of what it was.

D. Conference III--Cee acknowledges that she is gaining some control over her errors. The teacher shifts the topic away from error to development.

T: How do you feel your writing is coming as we go throughout the semester?

S: I notice that I don't make so many of these little errors I made before
like I notice where I should put my commas

and where apostrophe's should go
and little things,
but like the major
like sentence structuring
I still have trouble putting my thoughts into words
or print actually
.
.
.
.

S: They (high school teachers) didn't really tell us how to write
it out smoothly
without making real errors here and there.

T: Okay.
Okay.
Uhm,
so feel then,
I guess,
a way,
you know better how to develop

S: Uh hum.

T: your ideas.
Okay.

S: I feel much better now.

E. Conference IV--Cee, with her teacher's help, discovers a strategy for gaining control over her problems with error.

T: Do you feel like you could write three paragraphs then about that?

S: I think I can.

T: Yeah,
I mean you were talking it out.

S: Yeah.

T: You were saying a lot of stuff.

S: But it,
it's easier to talk it out than write it down on a piece of paper.

T: When you go back,
try to pretend like you're talking it out on paper.
You know.

S: You talk to the paper.

T: It's my belief
yeah
say it's my belief that in this picture

S: Uh hum.

T: And start out that way,
then you can cross off those extra words.
Remember how Trimble suggests /Okay/
that you do that /Yeah/
Just talk.
Pretend like you're explaining to a friend.

S: No,
it's much more different talking to a friend
because you can put in your own ideas.
You don't have to watch out too much about the little grammar errors [illegible] spelling errors or anything like that.
Just say right out
or you could maybe exaggerate a little bit more,
and everything's just flowing right out.
But when you're talking on,
to a piece of paper,
you're talking,
but then you might forget something
or you might all of a sudden change it.
Because I have a habit of changing everything in mid air.
Like I might have an essay al-almost done to type up
and then maybe one or two days before it's due,
I change the whole essay /Uh hum./
or go to a new topic because I don't like the form of my essay.

T: Okay.
Uhm
the only think I can say about that is that if
if it would help you get ideas on to the paper /Uh hum./
to think you were talking, /Yeah./
let those grammar errors come out
and then when you do your editing /Uh hum./
you can go back and correct it at a different stage.
So the point I just wanted to make for you was that I,
that it's possible,
maybe,
now maybe you're,
you're saying that just the speech and putting anything down on paper is really different.

S: Oh yeah.

T: Uhm,
which it is to a degree,
but sometimes if people feel like they're just writing to a friend
or they're explaining something to /Uh hum/ their audience is
somebody that's a friend
and they're writing out their ideas /Uh hum./
they can get more out on paper
and it flows more smoothly.

S: Like I was writing to a friend recently.
And I was telling him about the BART.
I said I'm crazy about BART.
And I was just telling all these little things
and how they're having fights in Daly City
and it really came out.
So maybe I should pretend that I'm writing to somebody about
the M & M's ad.

T: Yeah do.
Um,
pretend like you and I are,
are old buddies and I happen to be in the business now of,
producing M & M's
and you're the president of another corporation /Uh hum./
of an advertising corporation
and you're just explaining to me about this ad,
and then in your editing stage,
later,
once you get all your ideas out

S: Yeah.

T: Then go back and look at the grammar,
but don't worry about that when you're getting your ideas on
the paper.

S: I think that's what I do.
I worry too much about the grammar
and how it comes out the first time around,
and maybe that's the main cause that I worry about that too much,
that I don't really worry about how the paper would turn out in
the sense of is this the right ideas,
will the reader find that she can relate to this ad,
can she visualize the picture?

T: Yeah,
those are really important considerations.
If you realize that now,

S: Uh hum.

T: you've realized a big thing.

"See I saw a lot of things when I was doing the rewrite but I just couldn't put it down into words." The teacher asks whether Cee used an outline, and after Cee says that didn't work, she continues, "I wrote a few things that aren't complete sentences. That's the problem. See if I thought they were complete sentences, I would of probably put them in the essay." The teacher confirms with Cee that she actually leaves out ideas if she is unhappy with the form she puts them in. The teacher gives no direction other than that she thinks that Cee would improve her writing if "you get that confidence in your writing so that you can incorporate ideas." The teacher listens but makes no serious attempt to deal with Cee's concern. How will Cee gain confidence?

In an interview with me and Jo Keroes, a colleague who was helping with this research, Cee reveals that she begins to worry about her grammar quite early in her writing process. In B she describes her composing process, writing out chunks and getting out ideas in different orders; then, when asked whether she worries about grammar and sentence structure at this point, she says, "I worry about it then because I want to make it perfect at the beginning. That way I won't have to worry in the middle or at the end." Her strategy seems to be to handle all parts of the composing process simultaneously and to avoid revision at all costs, even at the cost of cognitive overload early in her prose.

In her third conference with her teacher, Cee reveals that her concern with how awkwardly a given idea looks on the page makes her forget what she wants to say next. In C she says, "Well see I had things running through my mind then, oh, I'm going to write that down. Then when I start to write it down it doesn't come out the way I was thinking about it. And it comes out all awkward and I try to get it back what I thought of before but then I can't think of what it was."

These three episodes and the topic analysis of the second conference present the portrait of a writer who:

1. is concerned with error,
2. is concerned, perhaps inappropriately early in her process,
3. is so concerned that she cannot get her ideas out (forgets what comes next), and
4. is so concerned that she omits other ideas that she fears aren't expressed correctly.

Given such knowledge about a student, a teacher could make several different pedagogical choices. She could try to teach Cee to control her errors. If Cee perceived that she had gained the control she desires, she would no longer feel insecure and blocked. But if Cee perceived she did not gain control, the teacher's focus on error could make the issue seem even more important to Cee and Cee might get even more blocked.

Alternatively, the teacher could emphasize her own lack of concern with error and could try to get Cee to adopt her values, something the teacher appears to be doing in much of conference II. But Cee fights the teacher at every step, bringing up mechanics as a topic of conversation whenever she can.

Third, the teacher could work with Cee on her strategies, helping Cee get out her thoughts first and then go back to correct her grammar.

Such a tactic includes the first two, for the teacher must teach control over mechanics so the student will know what to do when she goes back to edit. Also, the teacher must place this teaching in a context that shows it in relation to other problems in Cee's writing so that Cee will be willing to correct her errors later in her process. Ann Brown's recent work with poor readers suggests that they improve as readers after being trained in strategies that will allow them to learn from text (1980). I hypothesize that writers like Cee also will need to be taught strategies that will allow them to create better texts.

In the third conference of the semester Cee indicates that she has acquired some control over her grammar (see D in Table 4) when Cee says, "I notice that I don't make so many of these little errors I made before." Also, during this discussion, the teacher tries to shift the topic from error to development, her agenda in the second conference. She says, after quite a few speech hesitations, "you know better how to develop." Cee responds with the vague nonsequitor, "I feel much better now." About her problem with errors or her problem with development or neither or both? We cannot tell.

Finally, in the last conference of the semester the teacher admits the validity of Cee's concern with error and realizes that she must do something other than ignore the concern. She helps Cee understand a strategy that may help her deal with error in her writing. In E on Table 4 the teacher begins:

T: Yeah do.
Um,

pretend like you and I are,
are old buddies and I happen to be in the business now of,
producing M & M's
and you're the president of another corporation/Uh hum./
of an advertising corporation
and you're just explaining to me about this ad,
and then in your editing stage,
later,
once you get all your ideas out

S: Yeah.

T: Then go back and look at the grammar,
but don't worry about that when you're getting your ideas on the paper.

S: I think that's what I do.
I worry too much about the grammar
and how it comes out the first time around,
and maybe that's the main cause that I worry about that too much,
that I don't really worry about how the paper would turn out in the sense of is this the right ideas,
will the reader find that she can relate to this ad,
can she visualize the picture?

T: Yeah,
those are really important considerations.
If you realize that now,

S: Uh hum.

T: you've realized a big thing.

It is through the teacher's admission of the validity of Cee's concern with mechanics and the suggestion of a strategy for handling the concern that Cee is able to hear the teacher's concern with development of ideas.

An analysis of these lower level topics of conversation during the conference shows the main substantive pedagogical areas of interest or concerns, both for the teacher and the student. These two students, Cee and Jay, have different concerns while the teacher has similar but not identical concerns for each student. The teacher and Jay, the stronger student, converse about shared concerns beginning early in the semester. With the weaker student, it takes almost a full semester for the teacher and student to begin to converse. Shared concerns, I hypothesize, are at the base of effective teaching and learning. The teacher must guide some students carefully to get them to share her concerns. Such guidance is a critical part of teaching. Furthermore, in teaching writing, teachers need to help students acquire not only knowledge but also strategies for using that knowledge.

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THE COMBINING PROCESS

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One day about six or seven years ago I gave my Introductory Linguistics class an impromptu assignment for the next meeting. We were talking about transformational grammar at the time, and I wanted my students to realize and appreciate the great creative power of their knowledge of syntax. So I asked them to put together two simple sentences in as many ways as they found it possible, without changing the implied basic meaning. One of these short sentences was something like "Jane suddenly arrived"; the other, "This surprised us." I had expected them to create sentences like "It surprised us that Jane arrived suddenly," "We were surprised by Jane's sudden arrival," "Suddenly Jane arrived, which surprised us," and so on. For an incentive I offered a "grand prize" to the student who would come up with the largest number of combined sentences which the class agreed were all grammatically correct.

The student who ended up winning the prize (a giant lollipop) had produced over 200 combinations; she had quit, she said, only because she was getting tired, not because she had run out of combining possibilities. The class was fascinated by this demonstration, and I was proud of myself for making the point so dramatically. Then, a student from the back raised her hand and asked:

"BUT HOW DO YOU KNOW WHICH ONE TO CHOOSE?"

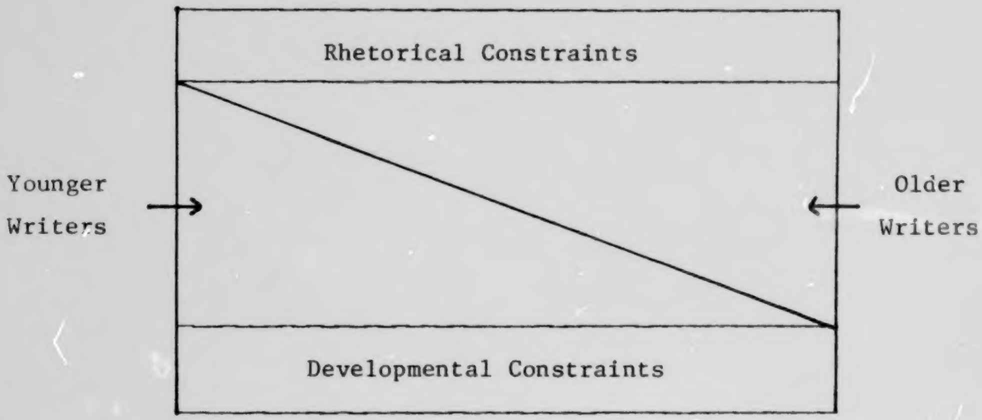
"Well!" I said, "That, of course, depends. . . It depends on which option sounds best to you. Just use your ears," I assured her, "and they will make the right choice for you."

I had not yet heard about sentence combining at the time; it was only later, through my involvement in teaching and researching writing, that I came to realize how significant that student's question was, and how inadequate my answer to it. It seems now that my response was symptomatic of a still unbridged pedagogical ravine between, on the one side, standard sentence combining methodology (or, for that matter, other types of practice with syntactic constructions), and on the opposite side, the strategies that a writer uses in the actual process of composing. A writer facing a page trying to figure out the next sentence must invent content and form together, within the context of an immediate textual frame as well as of a broader rhetorical setting. From the point of view of this task, sentence combining suffers from too much content, its goal being limited to the manipulation of syntactic form. On the other hand, imitation exercises, for example, including those in generative rhetoric, suffer from too much form, their task being limited to filling in specified syntactic frames with arbitrary content. And, finally, all such sentence-level approaches suffer from a tendency to be a-contextual, or at least from lack of a constraining apparatus that would gear linguistic choices to the writer's composing needs.

Nevertheless, sentence-combining exercises, at any rate, have come to be widely used as an aid to writing instruction. If so, it is worth asking whether the skills they provide have anything to do with the process of writing. One useful way to test this question is by reference to syntactic choice: why does a writer choose to formulate and express an idea in one particular syntactic form rather than another? What determines the writer's syntactic choice?

An alternative way to ask the question--one that suggests the direction of this paper--might be this: does the composing writer have a choice?

Let us consider that, although some people use the term "free writing," writing is anything but free. It is, in fact, a process conditioned by a network of intersecting and often conflicting constraints which, for the final product to be effective, the writer must learn to "juggle in clever ways." Flower & Hayes, to whom I owe the juggling metaphor, suggest that adult writers must accommodate three major types of constraints: the demand for integrated knowledge; the linguistic conventions of the written text; and the constraints of the rhetorical situation, which include purpose, audience, and the writer's projected self (1979: 53-4; 64). The limitations that affect the writer's decisions about syntax probably constitute, in part, subsets of such more general limitations. They seem to be imposed primarily by "givens" that are inherent, first, to the writer--his/her age, conceptual capacity and maturity (developmental givens): second, to the code used--the structural mold of the language and syntactic expectations that it imposes (linguistic givens); and finally, to the context of the evolving, processed written product, both textual and external (rhetorical givens). The constraints associated with developmental givens tend to be inversely related to those of rhetorical givens: the younger, the more immature and inexperienced the writers, the less they pay attention to potentially limiting effects of context and audience, and vice versa:



Suppose I am a young native writer of English, about age 8 or 10. Just as I learned the sounds of my language in a fairly fixed order about age 2 (Jakobson 1968), so I have been acquiring a command of syntactic patterns in a fairly set sequence. Both of these developments seem to be scheduled, as it were, by a built-in neurological timetable which presumably coordinates level of linguistic complexity with extent of available conceptual capacity, short-term memory, temporal attention span, etc. At age 8 or 10 I am obliged to cope with severe limitations on all these counts. On the average I write sentences about 13.5 words long and clauses about half that long (Hunt 1965), or about two clauses per sentence. Many of my clauses are still coordinated--which is the first sentence pattern I learned--such as (1):

(1) Jane suddenly arrived and she surprised everybody,

because the less deep the hierarchical structure of a sentence the more easily I can keep the sentence in mind as I write it. In general, how much information I can retain in memory at any one time sets limits to the complexity of my syntax. Besides coordination, my other preferred mode of integrating ideas is by adding relative or adverbial subordinate clauses to main clauses, as in (2) and (3):

(2) Jane suddenly arrived, which surprised everybody.
(3) Jane surprised everybody when she arrived suddenly.

But here again I cannot help obeying certain age-graded constraints, or at least trying to accommodate them. For example, the order of my clauses normally coincides with the logical or temporal order of the events reported as in (2) and (1), which is the order I first learned and still find easier to conceptualize (Clark 1971; Johnson 1975). But if this principle is overridden, as in (3), where the effect comes before the cause, the clauses will still be in the unmarked order "main followed by subordinate" (Clark & Clark 1968; Clark 1970; Bever 1970; Bever & Townsend 1979).

At least one important reason for the fronting of main clauses is my impulse to get to the subject of the sentence without delay, so that

I can fix in my mind what I want to talk about in the sentence. This impulse of users of English is so strong that it has been described as "nominal seizing," an event that is "structurally similar to the mental operation governing overt manual grasping: taking hold of something with one's hand" (Ertle 1977:147). Though later on in life I will learn ways to subdue this impulse by expanding the limits of my short-range memory, I am likely to remain more comfortable with modifying structures that are added to the right, such as in (3) or in (4),

(4) Jane suddenly arrived, [fresh out of jail,] surprising everyone [in town],

than with those added to the left, as in (5):

(5) By her arrival, which was sudden, and which was to everyone's surprise, Jane [did such and such].

By writing mostly progressively expanded cumulative sentences I can, in fact, become--if Christensen was right--a very good writer.

Why, then, this urge to get to the subject? Because of my unconscious fear that the longer I delay the subject the more likely I am to lose it. So in order to assure that I will keep it in memory, I use a variety of strategies, including the following:

a. limiting subjects to underived nouns, modified only perhaps by a full relative clause or an infinitive phrase (O'Donnell et al. 1967). Thus transformationally derived complex nominals like those in (6), (7), and (8), are not yet available to me:

(6) That Jane suddenly arrived surprised everyone;

(7) Jane's sudden arrival was a surprise to everyone;

(8) For Jane to arrive so suddenly was surprising to everyone.

b. shifting--indeed dislocating--the subject noun to the left of the sentence, and then reaffirming it by a pronoun, as in (9),

(9) Jane, she surprised everybody. . .

c. identifying the subject with the doer of the action expressed by the main verb. In (3), the doer of "surprise" is "Jane" and the doee is "everybody." But in (10),

(10) Everybody was surprised by Jane when she suddenly arrived,

the doer becomes subject and the doee an object; and in (11),

(11) Everyone was surprised by the sudden arrival of Jane,

by changing the concrete verb "arrive" into the abstract noun "arrival," I further upset the simple, one-to-one relation between the syntax and the semantics of the sentence. I cannot write sentences like (11); my style is, according to the scheme proposed by Williams (1979), maximally simple.

d. placing modifiers after the main clause, as in (3), and thus giving the main subject maximum initial exposure. But even if a clausal modifier comes before the main clause, it is likely to be in full form, as in (12),

(12) When $\begin{Bmatrix}\text{Jane}\\ \text{she}\end{Bmatrix}$ suddenly arrived, $\begin{Bmatrix}\text{she}\\ \text{Jane}\end{Bmatrix}$ [noticed that] everybody was surprised,

rather than in reduced form, such as (13):

(13) (By) arriving suddenly, Jane surprised everybody.

By having its own subject and verb, the clause gives better semantic closure than the phrase; thus it reduces the possible uncertainty about the status of the introductory material and therefore the pressure on momentary memory. By the same principle, I would use the first version of (12) rather than the second.

This last point suggests one more strategy for grabbing the subject, though this strategy affects my syntactic choices more generally, namely,

e. maximizing the redundancy, to keep my semantic intentions clear. To process a sentence, I need to be reminded conspicuously, through a repeatedly signalled matching of sentence form to understood meaning, where my sentence is headed, who is doing what to whom. I do not use, or I use at best sparingly, structures such as participials and appositives (14, 15).

(14) When Jane suddenly arrived, everyone [just stood there,] surprised

(15) Jane, a sudden arrival, surprised everyone

partly because such patterns omit vital structural information that I have not yet learned how to recover. My grammar does not yet include productive control of the transformational deletion rules which produce such patterns, precisely because (or therefore?) I cannot yet grasp semantic and syntactic relationships much beyond the domain of a clause (except perhaps in some trivial ways, like through pronoun reference) without keeping explicit syntactic markers in the surface structure (O'Donnell et al. 1967; Bever & Townsend 1979).

This is why I would tend to write (16),

(16) [The girl] who was arriving suddenly was Jane. . .

rather than (17),

(17) [The girl] arriving suddenly was Jane. . .

and why I would prefer (18) to (19):

(18) Jane [saw] that everyone was surprised when she arrived suddenly

(19) Jane [saw] everyone was surprised when she arrived suddenly.

In both (16) and (18), the underlying semantic structure is more transparent (Fodor & Garrett 1967; Bever & Townsend 1979), and therefore easier to remember.

Note that I prefer redundant patterns not because I give a hoot about my readers or worry about easing the readability of my prose. In fact, I am, by conceptual necessity, self-centered. Research has shown that "the cognitive unit underlying the subject noun phrase of a sentence is closer to the speaker's ego than that underlying" other noun phrases (Ertle 1977: 152). Indeed, it is with the referent of the subject pronoun "I" that I as a writer have maximum empathy (Kuno 1976).

A writer trapped by developmental givens like those suggested here will produce an extreme form of writer-centered or "writer-based" prose (Flower 1979): besides linguistic and cognitive underdevelopment, and in part because of it, such prose is marked by a general disregard for the contexts of writing, especially the needs of the reader. Some characteristics of this type of prose will of course accompany many writers into adulthood. From this perspective, our main pedagogical task is to help the writer shift from an "I-centered" to a "you-centered" perspective; in terms of the model used here, such a shift will occur to the extent that--among other changes--developmental constraints are gradually relaxed and concurrently, rhetorical constraints are gradually tightened (as shown in the Figure on pg. 3). Limiting our concern now to the problem of syntactic choice, how can we facilitate this shift?

There is strong evidence from 15 years of research (for summary, see Kerek et al. 1980) that the syntactic experience of young writers can be remarkably enriched through practice in sentence combining, especially with exercises that focus on specific constructions. Such practice helps enlarge the students' syntactic repertoire and increase their capacity for syntactic processing, by maximizing their chunking ability and thus expanding the size of their mental "armful"--the amount of information that they can pay attention to. Such practice is on the same wave length as the writer's natural development--only a few phases ahead of it, and thus augmenting and accelerating it. The many statistical figures reported in the literature on growth in syntactic maturity among pre-adolescents validly measure changes in syntactic innocence--a genuine growth in the capacity for conceptual knowledge. But with the onset of decentering this innocence is increasingly lost: the writer's emerging recognition of a perspective other than that of the ego is paralleled by the growing availability of transformationally derived free modifiers which, in a sense, the writer is "free" to use--free, that is, compared to bound or restrictive modifiers, which the writer cannot help using because those reflect conceptual knowledge (Mellon 1979). But this freedom is obviously illusory, or at any rate useless to the writer, unless it is tamed, bridled, defused, delimited, and of course placed in the writer's newly emerging perspective that takes cognizance of the context of every sentence--of the rhetorical goal that all choices should support. There is little point in having decentering student writers expand T-units ad nauseam for the sake of expanding them, unless one wishes to prove, as recently Smith & Combs did (1980), that students can do so without special training. Of course they can; the trick for the writer is learning to decide when to expand and when not to expand, and when the decision to expand is made, then having the syntactic know-how to implement that decision.

This brings me to the point that for decentering writers the optimal form of a sentence-combining exercise is *context-based*, where the syntactic decisions to be made are context-induced. In whole-discourse exercises of the type originally introduced by Strong (1973) this principle is applied rather loosely, with the result that, despite the presence of a general discourse context, in such exercises the syntactic choices are not sufficiently constrained (as recently argued in Kleine 1980). Truly context-based combining exercises should help refine the writer's ability to perceive potential threats of inappropriateness, ineffectiveness, or plain rhetorical blunder in their evolving prose. Such exercises should be signaled--not transformationally but rhetorically; they should not give the impression the the writer has more freedom of choice than he or she in fact does have. The rhetorical cueing can be explicit or implicit--in either case it will suggest that *in that context* not all syntactic choices are of equal value, and perhaps only one is best. When a linguistic rule is broken, we label the outcome "ungrammatical"; when a contextual inducement is ignored, we can speak of the resulting choice as being "unrhetorical." And just as there are degrees of grammaticality, we may also recognize degrees of "rhetoricality"--with the difference, of course, that the latter judgment would always be made by reference to a context. We should encourage students to flex their syntactic muscles, as Strong would say, to enjoy the discovery of their tacit transformational powers. But we much also show them how that power needs to be harnessed and channelled to best serve the writer's various communicative needs. The point here is that by working with syntactic exercises that have a more clearly defined contextual base, students in their role as sentence combiners can experience more fully a sense of the dilemmas and hitches of rhetorical decision-making which they must face in their capacity as composers of prose. Such exercises, then, perhaps help bridge the ravine.

Context-based sentence-combining exercises can take a variety of forms; to date, a few of the possibilities have been explored. We may assume, following the existing convention, that the content of the syntactic variable is fixed (although I interpret this loosely here), and let us assume that in the present case just once more, unmercifully, it is as given before. Typically, such an exercise might take the form (20) where the student is asked to combine the boxed kernels (base sentences) into an output that is appropriate in that context:

(20) We thought, judging from the racket
in the driveway, that a truckload
of marines had landed. No way!

Jane suddenly arrived.
This surprised everyone. →

An appropriate solution to (20) might be (20a) but not (20b) (lower-valued options are marked *). At an early stage of combining practice, students might be given such alternatives and asked to explain their choice; at a later stage they could be expected to approximate (20a) on their own.

(20a) It was only Jane, arriving suddenly [from the Bahamas] and surprising everyone [to death].

*(20b) Everyone was surprised to see Jane arrive so suddenly.

But surely this is just one of several possible formats, one can even imagine an exercise form in which a syntactic option is given as the constant and the context as the variable, as in (21):

(21) CONTEXT? →

[A good example is my old pal] Jane, who, by suddenly arriving [last night, really] surprised everyone [around].

Again, possible options may be supplied for discussion, such as (21a) and (21b), or left up to the student to provide:

(21a) People who barge in on you unexpected can leave you speechless.

*(21b) Stopping in to see your friends without first calling is not always a good idea.

Even if one decides to keep the implied propositional structure of the syntactic variable constant, it may be unnecessary to state that structure in so-called "kernel sentences"--an anachronism long forgotten by linguists and kept alive only in sentence-combining laboratories and in the minds of textbook writers. The status of kernels could be the subject of another paper; let me just suggest here that kernels--which are units fully garnished with surface structure paraphernalia--do not represent any stage in the conceptualization and processing of more complex sentences; and they certainly are not likely to appear in the scribbles and notes of writers laboring in the pre-writing stage--the intermediate sources from which the final ideas for a piece of prose are derived. We could consider, then, a combining format such as (22), in which the variable is provided in note-like words, phrases, clauses, and sentences, perhaps arranged into Christensen's familiar "levels of generality":

(22) My aunt Jane--she's quite a character. She has a special talent for alternately delighting you and getting you upset, for making you want to hug her and strangle her. At 3 a.m. this morning she had the worse of the two spells:

> arrived
>   did so suddenly
>   from Florida
>   made lots of noise
> created quite a surprise

→

gently pressing the killer instincts of everyone in the house.

This type of format is beginning to move from sentence combining to "idea combining," which is, perhaps, our final goal. It would be possible to move even closer to invention, without sacrificing the discipline and control that cued sentence combining exercises provide, by supplying the variable in the form of some non-verbal stimulus, such as a picture: here, while trying to obey the strict prescriptive mold of the textual context, the student would have to engage in presyntactic, conceptual selection as well.

Nevertheless, for the moment controlled-content formats such as (20) seem the most promising. Such short, context-based exercises are remarkably suitable for a problem-solving approach to identifying a wide variety of contextual constraints and using them as a guide for syntactic decisions. They can open up the class to extensive discussions of the why's and why not's behind such decisions. To whet their appetites, ask your students why, in the next few exercises (23-27), the unstarred choices are likely to be rhetorically preferable to those that are starred. The ensuing discussion could lead the class from questions of emphasis, coherence, old and new information, and topical focus to those of empathy, point of view, relative readability, tone, and stylistic complexity. And after the dust has settled, your students might have come a step closer to finding an answer to the question:

"BUT HOW DO YOU KNOW WHICH OPTION TO CHOOSE?"

(23) No, nobody batted an eye when the generals marched in, one by one. What did make people look up and all heads turn was

a. the surprising sudden arrival of Jane,

*b. the surprising suddenness of Jane's arrival,

the woman everyone had heard about but no one had yet met.

(24) My sister Jane--she likes to shock people. It worked for her again.

a She really surprised us by suddenly arriving [last night].

*b. We were really surprised by her sudden arrival [last night].

(25) Inconsiderate people come in all shapes and sizes.

a. [Take] Jane, [for example, who ignored our RSVP and then] suddenly arrived, surprising--[and somewhat irritating]--everyone.

*b. [Take] Jane's arrival, [for example,] which [happened so] suddenly that it surprised everyone.

c. [Take] the sudden arrival of Jane, [for example, who preferred to] surprise [us without responding to our RSVP].

(26) The party went pretty much as expected--a dull, routine affair. In her usual manner, only my sister created a bit of a stir. Since we hadn't expected her to show up,

*a. Surprising everyone, Jane arrived suddenly.

b. Jane's sudden arrival was a surprise to everyone.

c. We were surprised to [see] Jane arrive all of a sudden.

(27) You say you heard some unusual noise? No, my dear. The guests behaved most properly and delightfully. Everyone was quite composed of himself, in fact.

a. It was only the sudden arrival of Jane[, your half-witted cousin,] that caused a sprinkling of surprise among the male quests.

*b. Except when [your cousin] Jane arrived, she surprised hell out of everyone.

After she was requested to depart, everything proceeded back to normal.

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EVALUATION, REVISION AND INSTRUCTION IN WRITING

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It is only recently that I have been able to place much confidence in the reliability of procedures for evaluating written composition. For a long time, I assumed that evaluation of writing was inherently unreliable.

In the early sixties, I conducted a project on language structure and written composition (O'Donnell, 1963), in which I used the STEP Essay Tests developed by Educational Testing Service. These tests are described by the publishers as "free response tests of writing ability." The performance of individual students is evaluated by comparing their papers with papers that have already been rated by committees of "experts." The comparison papers are supposed to represent what exists in practice rather than ideal standards. They were selected on the basis of three factors, weighted as follows: Quality of thought (defined as "the selection and the adequacy of ideas and supplementary details, and the manner of their organization"), 50%; style (defined as clearness, effectiveness, and appropriateness, including matters of structure and diction, emphasis, the means of transition between ideas, and the finer points of simplicity, economy, variety, and exactness of expression"), 30%; conventions (defined as the proprieties of mechanical form, including grammar and usage, capitalization, punctuation, and the mechanical aspects of the structure of sentences"), 20%.

The reported intra-class correlation (an estimate of the consistency with which the readers ranked papers, based on two readings by the same group of readers) for Form 1 A was .50. The reported standard error was .85. On the basis of these statistics, the publishers claim "at least two out of three readers would score a paper as corresponding to the same sample essay." For some purposes, two out of three may not be bad; but for research purposes, I would like a higher level of agreement. In the attempt to improve the level of reliability of ratings, I employed two readers and devised a means to derive a rating in instances where they disagreed.

In the mid-sixties, I participated in a project sponsored by NEA and the Dean Langmuir Foundation. The size of high school English classes (then, as now) made it difficult for teachers to read all the papers if they gave assignments frequently enough to involve students sufficiently in written composition. The project was designed to encourage the use of lay-readers in order to lighten the paper load of over-burdened English teachers. We were concerned with the question of how students fared under such an arrangement, and we attempted to develop a reliable rating scale. We duplicated a set of papers and tried the scale out with a group of English teachers. The results were quite disappointing. I thought we had a good instrument, but the inter-rater reliability was extremely low.

In retrospect, I believe the fault was not with the rating scale--

we simply failed to give adequate instruction in how to apply it. We defined what each item was supposed to mean, but we had no group meetings and no practice sessions. Since that time, I have had opportunity to observe a number of projects in which raters were trained in the use of specific evaluation procedures. In some of these projects, inter-rater reliability coefficients in the .90's have been achieved. With such high agreement, I now feel much more comfortable with the results of research in written composition. Researchers probably will continue to refine evaluation instruments for specific kinds of writing tasks, and we should be able to make further advances in the quality of research in written composition.

My immediate concern, however, is not the improvement of research in writing, as important as that is. What I am most interested in is improvement in the teaching of writing, and to that end I would like to see us apply some of the things we have learned through research. There are at least two strands of research that I think could be brought together in such a way as to make instruction in writing more efficient. One is the strand of research that has led to more efficient means of evaluation; the other is the strand of research that has increased our knowledge about the role of revision in writing.

In the forthcoming (May) issue of Research in the Teaching of English, there will be a research note by Richard F. Thompson, who teaches English at Northern Virginia Community College, Annandale, Virginia. Thompson reports a year-long study in which he taught college freshmen to rate one another's papers with a relatively high level of reliability.

His experiment was tried with nine different classes in four consecutive quarters. The students were in their third quarter of a year-long composition sequence,and the papers they worked with were literary analyses. The scale they used was designed to distinguish three levels of writing quality, primarily the quality of organization and idea development. Students were instructed to give a rating of 1 to papers having a strong thesis, factual support or specific examples, good organization, and good transitions. They were instructed to give a rating of 3 to papers having a vague thesis or no thesis, only a plot summary, weak development of ideas, and excessive grammatical errors. Papers with an open-ended thesis and lacking in specific support, but having good organization and good transitions were to receive a rating of 2.

Students were taught to use the rating scale in eight practice sessions from 10 to 15 minutes in duration. They reviewed the rating criteria and rated sets of three student essays that four English teachers had previously rated with unanimous agreement. At first, as one might expect, the students' ratings agreed with those of the panel of teachers only about half the time. But, beginning with the fifth session, the students were able to reach an agreement level of approximately 80%. After the training sessions on selected papers, the students rated one another's papers. The papers were read independently, collected, and analyzed for reliability with ANOVA.

The fall quarter group had been encouraged to read as many papers in a one-hour session as they could, and their reliability score was low (.45). In subsequent quarters, Thompson organized reading groups of no more than five students and gave them no more than five papers to read. The winter, spring, and summer groups achieved reliability coefficients of .91, .88, and .91 respectively.

Thompson was understandably gratified with these results, and he thinks students could be trained as raters of papers for research purposes. Some of us might be reluctant to employ students as raters in our own research studies, but there is another aspect of Thompson's experiment: he found evidence that students trained as raters become better writers. Experimental students in the winter and summer quarters achieved significantly higher ratings than those in control groups.

A single study cannot provide answers to all the questions we might have about teaching students to evaluate writing, but Thompson's study suggests a potentially fruitful area for further research.

For many years, discussions of revision were largely based on subjective impressions of individual observers. Some teachers thought revision was an important part of the process of writing and required their students to revise first drafts. Others could see no significant improvement from first draft to revised draft and concluded that revision was a waste of time. More recently, research studies such as those of Nancy Sommers (1978) and Lilly Bridwell (1979) have given us objective data about revision practices of different kinds of students. Sommers studied revision practices of college freshmen and experienced adult writers; Bridwell worked with high school seniors. There is convincing evidence of a relationship between revising strategies of writers and the quality of their writing. What we still lack, however, is adequate information about how students learn to revise and whether or not productive revision techniques can be taught effectively.

I think it would be interesting to see what would happen if students were taught both evaluation and revision skills. If students can learn to evaluate the writing of others, perhaps they can learn to more effectively evaluate their own writing. Most of us find it easier to see the faults of others than to see our own, but perhaps writers can learn to be objective about their own writing. If students can be made aware of the strong and weak features of their own writing and can learn effective means to revise their writing, they should become better writers. If so, the work of those who must evaluate student writing on a daily basis will be made far more pleasant than it usually is.

The possibilities of further research on the combined effects of teaching students how to evaluate and revise their writing are exciting. Unlike some research problems, this seems to be one that has "handles." Perhaps some of us will design a project that will give us some useful information about evaluation, revision, and improved instruction in writing.

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THE INVENTION OF WRITING

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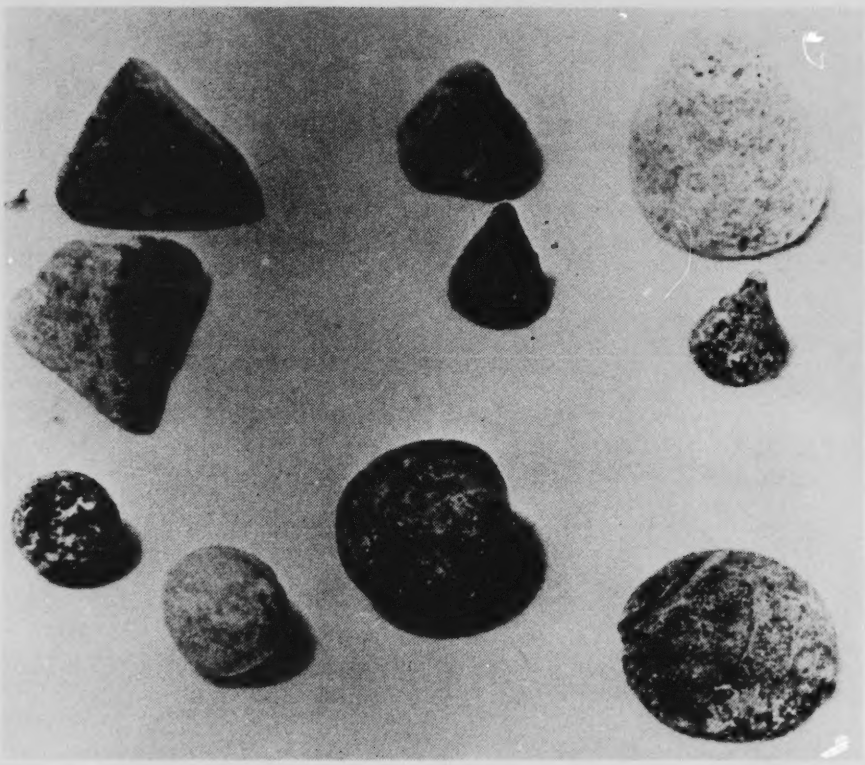
Current belief maintains that writing was first invented in Meso-Potamia (present day Iraq) by the Sumerians about 3500 B.C. Archaeologists have recovered about 5,000 archaic texts dating from 3500-2900 B.C. The largest collection of about 4,300 texts came from the site of Warka in Mesopotamia. Others were found in a half a score of sites situated in Syria and western Iran as well as Iraq. The texts are written on tablets in the form of a small cushion with strongly convex faces, and, interestingly, there is no difference between the front and the back surfaces. Except for rare occasions when the tablets are made of stone, the usual material is clay, commonly explained by the fact that the Mesopotamian flood plain was rich in clay as a raw material.

Evidence gathered from extensive research since 1969 on the earliest uses of clay in the Middle East has led me to conclude that the origin of writing was much earlier than previously assumed. My study of ancient clay collections indicates that the Warka tablets only represent an evolutionary step in a sophisticated system of recording which had been indigenous to the Middle East since 8500 B.C. This accounting system was based on clay tokens of various geometric and odd shapes. It was probably used without apparent modification until around 3500

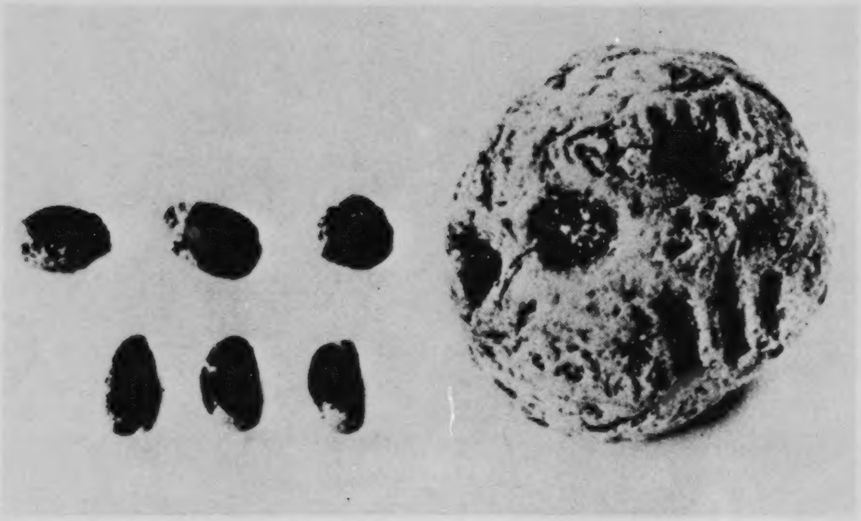


Tokens of geometric shapes--spheres, discs, cones, tetrahedrons and various additional shapes--are recurrently found throughout the Middle East in a sizeable number of archeological sites from 8500-1500 B.C. It is assumed that these tokens were part of a widespread recording system and that the cones stood for 1 and the spheres for 10.

B.C. when a minor invention, the use of a clay envelope to hold the tokens of a particular transaction, ushered the system onto a drastically new course. Check marks on the surface of the clay envelope, or bulla, which repeated for convenience the number and kind of tokens inside, proved so effective that soon tablets with check marks supplanted the old system of bullae and tokens. These check marks became the first form of writing and led to the pictographic stage of the Warka tablets.

If my theory is correct, it radically alters our previous conception of human cultural development. It pushes back the origin of writing by five thousand years. It further evidences the existence of a sophisticated system of recording prior to writing which would explain the seemingly instant standardization of writing in a widespread area. Finally, it suggests that a basic communication system in the form of tokens was shared by a number of prehistoric and early historic cultures of the Middle East, possibly extending as far as Nubia and the Indus valley.

To return to the Warka tablets, epigraphists have continued to be puzzled by the fact that the great majority of the signs on the tablets are totally abstract signs, and they have not yet discovered the key to deciphering the texts. Thus, most of the content still remains a mystery. The few readily recognizable pictographs on the tablets represent objects of infrequent use, such as chariots, variety of birds, wolves, etc. On the other hand, the abstract signs which have been identified on the basis of later development in cuneiform writing represent commodities of frequent use. For example, bread is a cone with a con-

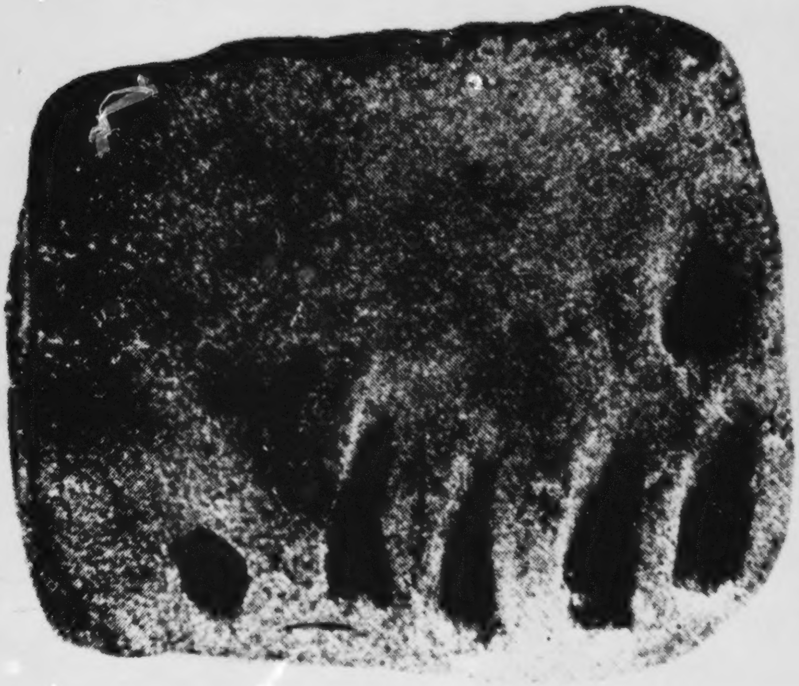


Around 3500 B.C. a slight modification in the recording system occurred when all the tokens which represented a specific transaction were enclosed in a clay envelope or bulla. However, the bulla had the great disadvantage of hiding the enclosed tokens and any verification necessitated breaking it. This led to another more significant modification--indenting the bulla's outer surface with marks that corresponded to the shape and number of tokens inside. These crude marks ushered the ancient system of recording onto a totally new course: writing.

vex base, beer is a cone with a constriction above the base, and sheep is a circle enclosing a cross. The series of signs consist of multiple variations of basic forms including circles, cones, and rods. The signs for numbers, for instance, are variations of cones and circles. Number signs are differentiated from the remaining vocabulary by the technique of impressing them with the blunt part of the stylus, while the other characters are incised with the pointed tip.

This abstract character of the majority of the signs and the fact that the repertory of signs found in Iraz, Syria, and Iran include an impressive body of around 2,000 signs have led some to suggest that the ancient clay tablets were not the true beginnings of writing but in fact represent an already well-developed and sophisticated phase. A preliminary stage could have existed when early pictographs evolved to abstract forms. As no evidence of this earlier form had even been recovered, it was hypothesized that the earliest stages of writing may have been practiced on a perishable material, such as wood, which did not survive. On the contrary, I think that the choice of clay as a raw material for the tablets, their peculiar shape, and the form of the abstract signs indicate an earlier prototype which also used clay as its medium.

An archaic system of recording from the temple archives of Susa was identified recently by Pierre Amiet at the Louvre in Paris. It consists of small tokens, usually of geometric shapes such as cones, tetrahedrons, spheres, and discs, held together in a clay envelope molded



Once the system of marks was understood, it made the former token system obsolete and solid clay tablets bearing impressed signs replaced the hollow bulla filled with tokens. It is of interest that the shapes of the impressed signs were the same as the shapes of the tokens: a conical mark for 1 and a circular mark for 10.

in the shape of a hollow clay ball as large as a fist (bulla). In my research, I found that small tokens identical to those enclosed in the bullae of Susa were commonly found loose in ancient Middle Eastern sites between the 8500-3000 B.C. period. I am intrigued in particular by the fact that several of their shapes are similar to abstract signs written on the Warka tablets. It appears to me that the evolution of an early recording system based on tokens may have led to writing in four main stages.

First stage: 8500 B.C. A system of recording is used based on tokens.
Second stage: 3500-3200 B.C. Clay containers (bullae) hold the tokens of a particular transaction.
Third stage: 3500-3200 B.C. Signs are impressed on the surface of the bullae.
Fourth stage: 3200-3100 B.C. Clay tablets appear with impressed and incised signs.

The Tokens. Clay began to be used in the Middle East around 8500 B.C. Among the first clay objects occur series of geometric tokens including spheres, discs, cones, tetrahedrons, long pellets, and a series of subtypes such as one-half and three-fourths spheres, pyramids, and biconoids. Specimens of each type and subtype have incised and punched marks. These tokens are of small dimension, ranging from 1 to 2.5 cm and seldom reaching 3 to 5 cm. Rare examples are reported in stone, ochre, plaster, and bone, but the great majority are made of fine, untempered clay. Their careful manufacture was achieved by simple hand molding, either by rolling them between the palms of the hands or by pinching them with the finger tips. Their color, ranging from red to buff with many blackish examples, indicates that light firing was involved. Not only are they found from the extended time period of five thousand years without any obvious changes, but they are also found in a widespread geographical area, including Egypt, Palestine, Syria, Anatolia, Mesopotamia, and the Indus valley.

The number of tokens at each site may reach sizeable proportions. For instance, the Jarmo (Iraq) report mentions 1,153 spheres, 206 discs, and 106 cones. The tokens are often discussed in site reports and usually excavators wondered about them. C.S. Coon describes the five cones he found in Belt Cave (Iran) as "looking like nothing in the world but suppositories." V.L. Broman called those from Jarmo "Hershey kisses," and K. Evett classified those from Tal-i-Iblis (Iran) under the heading "Mystery objects." The cones, spheres, discs, and various other shapes, although they consistently occur together, have never been realized as belonging together. They are usually assigned different functions: sling stones or marbles for the spheres; potlids for the discs; and nails, polishers, gaming pieces, and female symbols for the cones.

The definite shape of the tokens, the care with which they are made, their firing, their number, and their widespread distribution in space and time suggest that they had a precise function of some importance.

The Palace of Nuzi (Iraq) is known to have used a simple accounting system based on tokens to keep count of its herd animals. Each animal was represented by a token which was deposited in a basket. Tokens would be transferred to appropriate baskets to keep track of change of pasture or shepherds, to know when animals were shorn, and so forth. This system is similar to many simple counting systems: the Romans used small pebbles or "calculi" as counters, many of us have learned to add and subtract with an abacus, and present-day Iraqui shepherds still keep count of their animals with pebbles. The Nuzi system has been dated from about 1500 B.C., but there is no reason to believe that such a system could not have existed much earlier.

The system of tokens beginning from 8500 B.C. seems, however, more elaborate than simple pebble counters since it includes a repertory of numerous shapes. What could have been the meaning of those shapes? Could they not be prototypes for the abstract forms discovered on the ancient clay tablets?

It is striking that the tokens share basic shapes with some of the abstract signs on the tablets, particularly those for numbers. The number 1 is represented by a conical mark impressed with the blunt end of a stick, 10 is a circular impression, 60 is a large cone, 600 is a cone with a circular punch, and so forth. Can we assume that a token in the shape of a small cone stood for 1 and the small sphere for 10? This would explain the most common shapes of the tokens, but what would the more complicated shapes represent? Again some of the signs can be equated with the token shapes. Could not the cones with a constriction over the base, the cones with rounded bases, and the cones with a coil or incision around the base stand for beer, oil, and bread? Could the discs with an incised cross stand for sheep?

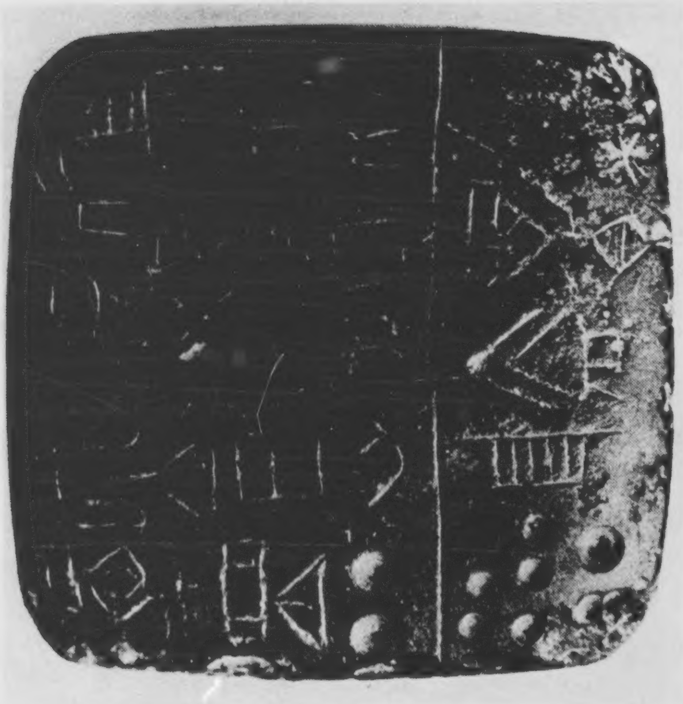
The Bullae. Bullae are hollow clay balls which are completely closed. When shaken they produce a rattling noise indicating that they have a content, and when broken they are found to hold a various number of tokens. They appeared around 3500 B.C. in a period slightly preceding the appearance of clay tablets. The bullae have been described as bills of lading which accompanied country products when they were transferred to the temple. The producer consigned his goods to the care of a middle man together with a bulla containing the number of tokens equivalent to the shipment. The recipient of the delivery could, by breaking the bulla, check the accuracy of the shipment on arrival.

The bullae, in other words, fulfilled the same function as the early tablets. They were economic records of the temple. The former used a three dimensional system of tokens in the shape of cones and spheres enclosed in a hollow clay ball; the latter used two dimensional written characters, some in the shapes of cones and spheres written on a solid clay ball. The bullae can, therefore, be viewed as the prototype of the tablets which explains the choice of clay for the manufacture and convex shape of the tablets.

The disadvantage of the bullae was that they totally hid the tokens. Thus any verification necessitated the breaking of the bulla. To overcome this difficulty, some bullae bear on their outside surface impressed signs repeating not only the number but also the shape of the tokens inside; circular impressions for discs and spheres, conical impressions for cones and long pellets. The innovation was, of course, of great convenience since it permitted the "reading" of the amount of tokens at all times without necessitating the breaking of the *bulla*. These marks may be viewed as the crucial link between an archaic system of recording in three dimensions and writing. As soon as the system of marks on the exterior of the *bulla* was generally understood, it obviously made the system of placing tokens inside the *bulla* superfluous and obsolete. Tablets with numerical signs then made their appearance.

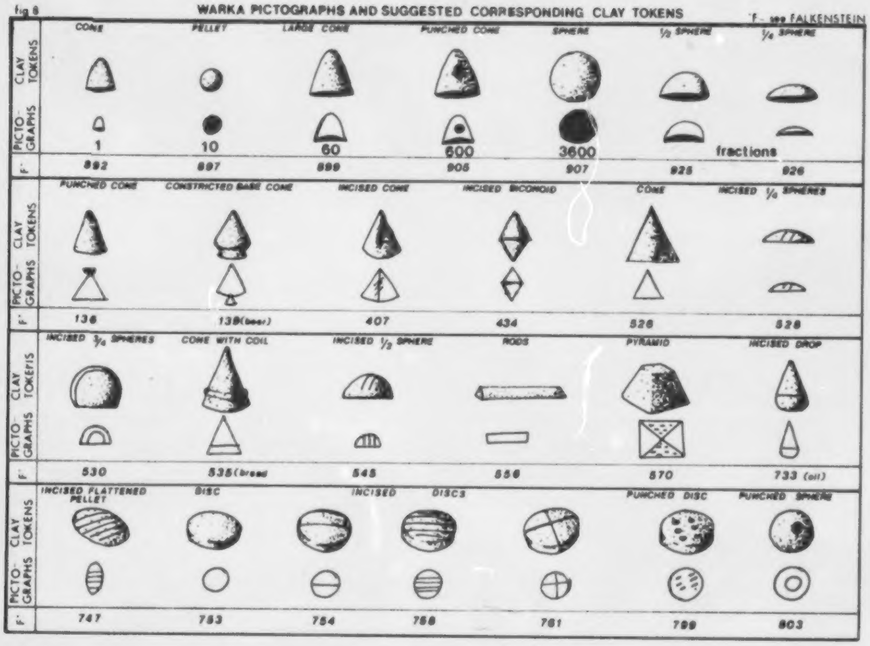
However, the signs impressed with the blunt tip of a stick did not allow much precision. In particular, there was no difference possible between the representation of a sphere and a disc, or between a cone and a tetrahedron. Specialized tools or styluses were invented which could make more complicated shapes with accuracy. These more sophisticated signs became pictographs. They did not, however, represent the shapes of the items but rather of the tokens in the previous recording system. As writing was established, a new vocabulary was developed expressing new inventions such as metal tools, the plough, and chariot by true pictographs drawn lifelike according to the objects.

N.B. The research on early clay collections and uses of clay in the Middle East was funded in part by the Radcliffe Institute, the Wenner Gren Foundation, and The University of Texas at Austin. This article is the abbreviated version of a scholarly paper, "On the Inven-



The impressed signs did not allow much precision and soon the invention of a pointed tool or stylus made it possible to trace a variety of distinctive signs which represented daily commodities. The totally abstract shapes of these signs have puzzled epigraphists who consider them to be pictographs, or small pictures of the objects represented.

fig 6 WARKA PICTOGRAPHS AND SUGGESTED CORRESPONDING CLAY TOKENS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CLAY TOKENS
PICTO-GRAPHS
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LARGE CONE
PUNCHED CONE
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1
10
60
600
3600
fractions
892
897
899
905
907
925
926
PUNCHED CONE
CONSTRICTED BASE CONE
INCISED CONE
INCISED BICONOID
CONE
INCISED 1/4 SPHERES
136
138(beer)
407
434
526
528
INCISED 3/4 SPHERES
CONE WITH COIL
INCISED 1/2 SPHERE
RODS
PYRAMID
INCISED DROP
530
535(bread
545
556
570
733 (oil)
INCISED FLATTENED PELLET
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INCISED DISCS
PUNCHED DISC
PUNCHED SPHERE
747
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803

The shapes of the signs on the early clay tablets are strongly similar to the shapes of the ancient tokens. If my theory is correct, the early signs were indeed pictographs--not, however, of the objects themselves but rather of the token which represented them in the previous archaic system of recording.

tion of Writing," published in Syro-Mesopotamian Studies (Vol. 1, No. 1) in April 1977. This abbreviated version was originally printed in DISCOVERY: Research and Scholarship at The University of Texas at Austin, Volume 1, Number 4, June 1977.

SEMANTIC ASPECTS OF REAL TIME WRITTEN DISCOURSE PRODUCTION

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In sharp contrast to the pioneering state of most writing process research, research on text comprehension is an area in which theoretical models have been developed and empirically tested. The purpose of this report is to explore how research on text comprehension might suggest a useful direction for research on writing. Specifically, research based on text recall protocols suggests that over time readers increasingly rely on semantic aspects of the text to reconstruct its meaning. The process of making meaning--whether from a previously read text or, in the case of writing, from a wealth of knowledge and personal experience--is critical to an adequate understanding of the writing process. To this end, the first section of this report offers a selective summary of research on text comprehension. In the succeeding section we discuss the implications of this research for modelling writing processes.

Methodologically, this report relies on a long research tradition in speech production which supports the assumption that studying the temporal properties of language will "yield lawful results that are essential to a viable psycholinguistic explanation of speech [and writing] behavior" (Sabin, Clemmer, O'Connell, & Kowal, 1979, p. 35; Appel, G., Dechert, H., & Raupach, M., 1980). To explore the role semantics plays in the production of written discourse, we used a propositional analysis scheme developed by Walter Kintsch (1974) for use in text comprehension studies. This scheme, which attempts to represent the underlying meaning of a text, was then applied to on-line writing data. The remainder of this report explains the procedures and results of this exploratory study.

Text Comprehension

A generally accepted notion about the nature of text comprehension is that verbatim memory for *syntactic form* fades relatively quickly, whereas *meaning* tends to be stored over time. Researchers such as Sachs (1967) and Bransford and Franks (1971) obtained experimental evidence which indicated that information stored in memory may be independent of its linguistic expression. Likewise, Kintsch (1974) found that semantically equivalent sentences which were presented during text comprehension studies in both simple and complex syntactic versions were represented in memory in an identical form. These results suggest that the reader stores in memory the logical-semantic content of prose but not the linguistic form in which it is expressed.

Text comprehension researchers have also concluded that not only is meaning stored over time but that recall generally relies on the construction of a schema or script. Experimenters using scrambled stories, familiar and unfamiliar stories, and culture-specific texts have found that information is often recalled on the strength of a macro-plan, schema, or script (Kintsch & Van Dijk, 1978; Mandler, 1978; Kintsch & Green, 1978; McKoon, 1977; Kintsch, Mandel, & Kozminsky, 1978; O'Connell, Kowal, & Hörmann, 1969). Furthermore, the construction of scripts relies heavily on the knowledge a reader has about the text. For example, Spilich, Vesonder, Chiesi, and Voss (1979) found that subjects with low knowledge of what they were reading had trouble integrating the events into an overall global structure so that their recall resembled a free recall list. However, recall protocols of subjects with high knowledge of content were well integrated, complete, and elaborated. It seems clear, then, that *readers store meaning (not syntactic form) over time by constructing schemas or macro-plans*.

Examining the effects of passage structure on text comprehension, researchers found that hierarchical structure plays an important role in what is recalled from a text. The relative importance of information and its position in a passage influences a reader's ability to seek out, organize, and recall facts. Meyer (1977) found that information high in the content structure of a passage was recalled better than information low in the structure. McKoon's results (1977) indicated that superordinate information--concepts that are central to the content of a passage--is recalled faster and more accurately over time. Furthermore, superordinate statements at the beginning of paragraphs (rather than at the end) aided recall not only of superordinate statements but also of related subordinate details (Kieras, 1978). Similarly, important events in stories which had high relational density (i.e., were closely related to one another) were recalled better than minor events with low relational density (Graesser, 1978). These results indicate that *readers tend to store and recall superordinate information better than subordinate information*.

The above conclusions about the semantic nature of text comprehension have prompted researchers to hypothesize about the form in which information is stored in memory. Schemes which attempt to characterize the underlying meaning of texts generally rest on two assumptions: (a) comprehension is semantically based, and (b) surface structure expression of underlying meaning can take many forms (see Meyer's review, chapter 2, 1977). Some researchers represent the underlying meaning of text in terms of propositions--basic information units consisting of a predicate and one or more arguments. Using propositions to characterize the natural logic of thought processes represents a departure from explanations which rely on standard logic or transformational syntax. These explanations attempted to present formal rules for generating well-formed surface expressions or proofs. However, these models did not help us to understand actual thought processes. A propositional model, on the other hand, is concerned with how and in what form readers store concepts in memory. Such models hypothesize that readers derive the meaning of a text by constructing relevant relationships from underlying content rather than from surface structure expression. In addition, these models suggest that *readers store meaning in propositions, a logical semantic form independent from syntax* (Kintsch, 1974).

Modelling Writing Processes

Constructing schemas to organize meaning, identifying superordinate information, and storing content in some logical-semantic form for future use are activities crucial to comprehending written texts. What, then, do these activities suggest for studying written language production?

Constructing Schemas

Schemas--highly abstract mental patterns--offer a powerful mechanism for learning about how conceptual knowledge is developed and organized during both reading comprehension and writing processes. The notion of a schema is a powerful mechanism because it does not limit researchers to narrow conceptions of the writer's knowledge base in terms of an intricate long term memory structure. Rather, researchers can explore production processes by studying how a schema is constructed from the writer's knowledge base, as well as how a schema is shaped in response to a particular purpose or a particular context.

A common tactic for learning about schema formation during recall and therefore for learning about organizing information and experiences has been to compare the reading times for stories in real time and in story time. Real time stories reflect normal chronological order of events while story time stories use a variety of techniques like flashback or random order to alter the real time reporting of events. Readers typically take much more time to read stories in story time than in real time. Experimenters suggest that the longer time is taken up in organizing information by constructing schemas. A schema for understanding a story is not stored intact, however. Kintsch warns that, "In comprehending discourse, . . .one does not pull a frame out of LTM, ready made, and then plug text propositions into the slots of that frame, but one constructs a frame suitable for organizing a particular text, using relevant knowledge." (Kintsch, in press, p. 7).

If schemas are not stored ready made, how do writers store and retrieve information? This has been a central question for research on memory. Too often, however, the complexity of memory function in language processes has been under-conceptualized. Studies of list-learning and other such simplistic language tasks have contributed to notions of long term and short term memory storage. For production and comprehension processes, these notions, in and of themselves, are inadequate. The examination of recall protocols has led some investigators to hypothesize that relationships among units of information or chunks may be stored in memory (Mandler, 1978; Black and Bower, 1979). It has been found that information about the ways events occur in the world help form these relationships. For example, given a traditional story to recall, readers tend to remember events that are goal-oriented (actions and their outcomes) because they are common and predictable from our life experience. It seems that a schema directs the reader to identify relevant relationships for reconstructing a coherent whole. If relationships rather than full-blown schemas are stored in memory, then a rich set of possibilities exists for organizing information in a variety of ways.

The construction of schemas is critical to language production. O'Connell, Kowal, and Hörmann (1969), in a study of speech production, found that when speakers retold paragraph length stories containing one semantically incongruous sentence, changes in pause patterns were evident. These results suggest that the speakers were actively engaged in reconstructing a schema for retelling the paragraph containing the anomalous sentence.

During written discourse production writers operate under the rubric of a schematic representation of knowledge in response to a specific discourse task. For instance, Matsuhashi (1981; see also Goldman-Eisler, 1968), suggests that reporting and generalizing tasks, in their most typical form, require a different organization of content and thus different schematic representations. Reporting requires a chronological ordering of events which allows the discourse to move forward at the same level of abstraction. Schemas for reporting tasks appear to be well practiced and readily available. Schemas for generalizing tasks, by contrast, present a greater challenge to the writer, requiring a matrix-like mix of highly abstract statements with subordinate detail. In addition, to produce a piece of generalizing a writer must abstract a logical framework from a wealth of personal experience. Thus, generalizing presents a substantially more difficult task.

Identifying Superordinate Information

What is stored in memory during recall are not complete schemas: Rather, schemas are constructed to identify relevant relationships among units of information. Research in comprehension processes further suggests that recall is organized, at least in part, hierarchically. This means that schemas not only direct the identification of salient information but also help organize that information in terms of relative importance or rank.

How is information organized hierarchically in memory? Passage structure plays an important role: Concepts central to the content of a passage, and, therefore, rehearsed more by readers, are processed for long term storage. By contrast, peripheral information is rehearsed less in short term memory and tends to be forgotten quickly. For that matter, school learning throughout one's life requires that a listener or reader discover and remember the message of the speaker or writer. This is done by processing and recalling important information at the top level of the content structure in the discourse. In such a manner language users are able to rank facts in order of importance for ease of processing and recalling (Meyer, 1977).

This same process--identifying and organizing salient ideas and information--is an integral part of the writing process. To produce a written discourse writers must somehow discover what a discourse is about, that is, discover the "gist" of the discourse. This discovery constitutes a macro-plan which guides decision-making processes throughout production. Some decisions involve identifying general or abstract information which serves to organize the discourse; other decisions involve identifying information which elaborates or defines the gist of the discourse. Nold and Davis (1980) have developed a surface structure analytic scheme which categorizes sentences by the level of abstraction in the discourse. Matsuhashi (1981) found that highly abstract sentences required more planning time than sentences which add detail to support the abstraction.

The Propositional Nature of Knowledge

One way to characterize the meaning networks underlying a text is through a propositional model. While what goes on in a language user's mind is, in one sense, unknowable, the researcher can recover much of the intended meaning directly from whatever is expressed in surface structure. In addition, a researcher must make inferences about the writer's intended meaning. While ambiguity always exists, it can be reduced by making inferences about intended meaning from the entire text rather than from isolated sentences. Textual analysis of surface structure combined with inferencing allows us to recreate a reasonably thorough semantic interpretation which can then be used in research (Kintsch, 1974).

A propositional text base is a list representing all the fundamental relationships that exist in a text. Even though the propositions in the list are expressed in words, it is important to remember that these words represent abstract concepts. As a result, words expressed in the propositional text base may not be present in the surface structure of the text, nor is every word in the surface structure accounted for in a propositional analysis. In addition, propositions do not have tenses: Tense is a product of the syntax of the language and as such is chosen according to linguistic rules and temporal reference.

Propositions may be classified into three categories: predication, modification, and connection. These three categories are, in turn, further defined by subcategories. Predication, presumed to be the central relationship during text production, expresses an action or a state. When a relation is an action, its arguments fill particular cases, each of which has a particular semantic relationship to the action specified by the verb. Each argument can assume a different case relationship: agent, experiencer, instrument, object, source, or goal. In addition to case relationships, predicate relations are also classified as predicate nominals and predicate references.

Relations of modification express ways to restrict or limit one concept by another. The four relations of modification are qualifiers, quantifiers, partitives, and negations.

Connective propositions coordinate propositions in a text. Arguments of connective propositions are often other propositions in the text. There are eight subcategories of connectives: conjunction, causality, disjunction, purpose, concession, contrast, condition, and circumstance. These propositions may be expressed in the surface structure as conjunctions, adverbs, or adverbial phrases; however, not all conjunctive relations are explicitly expressed in the surface structure. (For a more complete explanation of Kintsch's propositional analysis, see Turner and Greene, 1977.)

This description of the underlying semantic content in a text offers intriguing possibilities for exploring production processes. If propositional text bases allow a relatively accurate representation of the semantic content of a text, then their use in writing research may offer insights into aspects of the production process which surface structure analyses cannot account for.

Purpose

In the preceeding sections we suggested that the cognitive activity of producing meaning involves similar strategies during both text comprehension and written discourse production. To examine meaning-making strategies during written discourse production we adopted a propositional analysis scheme commonly used in text comprehension studies (Kintsch, 1974).

The purpose of this study is to determine the effectiveness of this scheme for classifying propositions during real time discourse production. Specifically, we predicted that predication propositions would require more pause time than modification propositions. In addition, we predicted that pauses associated with predication and modification propositions in a segment of generalizing would require more pause time than in a segment of reporting.

Method

Writing Samples

The writing samples used in this study consist of the first hundred words (approximately) from a piece of generalizing (see Figure 1) and from a piece of reporting (see Figure 2) produced by a single, high school writer. Samples from these two discourse types were chosen for analysis because of the significant difference in pause time found between them in previous research (Matsuhashi, 1979, 1981). The writing samples are coded with pause times indicating the time (to tenths of a second) that the writer stopped between each word. This data is drawn from a previous study (Matsuhashi, 1979, 1981) and the reader is referred to that study for detailed information on the methodology employed.

Coding the Data

Propositional text bases were constructed using the format described in Turner and Greene's coding manual (1977). The complete propositional text bases for generalizing and reporting are included in Appendix A and B, respectively.

Working from the propositional text bases, we analyzed the frequency of the various types of propositions. Connection propositions were excluded from further analysis because they occurred infrequently

Figure 1

Pause Times For A Segment of Generalizing

Truly$^{.6}$successful$^{1.1}$person$^{.5}$-to$^{.8}$-person$^{2.3}$communi$^{1.8}$cation$^{3.5}$is$^{1.9}$difficult$^{1.3}$because$^{6.9}$people$^{.6}$in$^{.9}$general$^{1.1}$are$^{.9}$poor $^{1.0}$listeners. $^{7.0}$They$^{1.0}$would$^{.7}$rather$^{1.4}$listen$^{.5}$to$^{.9}$themselves$^{1.9}$speaking $^{2.1}$than$^{.4}$someone$^{.7}$else$^{.5}$. $^{4.7}$It$^{.9}$is$^{.7}$my$^{.7}$feeling$^{1.9}$that$^{9.7}$this$^{.8}$occurs $^{1.6}$because$^{1.1}$of$^{1.2}$a$^{.8}$basic$^{2.7}$self-centeredness.$^{16.6}$: $^{5.5}$people$^{4.8}$tend$^{1.2}$to $^{1.9}$be$^{.6}$more$^{.5}$interested$^{.7}$in$^{.7}$their$^{.9}$own$^{.7}$lives$^{1.5}$to$^{1.2}$bother$^{1.0}$exposing $^{1.3}$themselves$^{.7}$to$^{.5}$how$^{.7}$others$^{.8}$live.

$^{13.3}$Communication$^{1.2}$is$^{.7}$successful$^{.8}$only$^{.8}$when$^{2.9}$there $^{2.2}$is$^{2.4}$"$^{.5}$give$^{.6}$and$^{.8}$take"$^{1.1}$between$^{3.7}$the$^{.7}$parties$^{1.1}$. $^{3.7}$Each$^{.7}$one $^{1.9}$should$^{.9}$contribute$^{1.2}$equally$^{2.1}$,$^{1.0}$as$^{.8}$well$^{.7}$as$^{2.0}$accepting$^{.7}$the $^{2.2}$contributions$^{5.3}$of$^{.6}$the$^{.7}$others. $^{12.8}$The$^{.6}$situation$^{.7}$I$^{1.0}$have $^{1.8}$described$^{6.6}$above$^{3.2}$leads$^{.6}$to$^{.6}$poor$^{.8}$communication$^{1.7}$,$^{1.0}$since $^{1.9}$everyone$^{.8}$wants$^{.9}$to$^{.6}$"give"$^{1.2}$and$^{.8}$no$^{1.0}$one$^{.6}$wants$^{.9}$to $^{1.2}$"take."

Figure 2

Pause Times For A Segment of Reporting

1 Back$^{.8}$during$^{.8}$my$^{.6}$junior$^{.7}$year$^{.6}$in$^{.7}$high$^{.7}$school
2 $^{2.1}$I$^{3.2}$managed$^{1.0}$to$^{.8}$get$^{1.1}$myself$^{.9}$involved$^{1.1}$in$^{.6}$a$^{4.5}$project
3 $^{1.6}$that$^{1.5}$was$^{6.1}$a$^{.8}$little$^{.7}$more$^{.4}$than$^{.8}$just$^{1.0}$run-of-the-mill.
4 $^{5.1}$Students$^{1.0}$in$^{.7}$my$^{1.7}$AP$^{.9}$American$^{.8}$History$^{2.3}$class$^{.7}$were
5 $^{1.7}$to$^{1.2}$pair$^{.7}$off$^{1.6}$in$^{.6}$order$^{.8}$to$^{6.8}$do$^{1.1}$a$^{1.0}$report$^{2.3}$on$^{.9}$some
6 $^{1.5}$aspect$^{.9}$of$^{.8}$the$^{1.0}$Jacksonian$^{.9}$era$^{.9}$. $^{6.3}$My$^{2.3}$co-conspirator
7 $^{1.6}$and$^{1.8}$I$^{1.4}$chose$^{3.2}$Daniel$^{.8}$Webster,$^{.6}$who$^{.4}$as$^{1.6}$we$^{.7}$soon
8 $^{7.1}$found$^{.6}$out$^{1.8}$,$^{.7}$was$^{2.2}$a$^{.7}$most$^{.8}$fascinating$^{.7}$figure$^{.6}$in$^{.7}$U.S.
9 $^{1.9}$history$^{.8}$. $^{4.6}$We$^{1.0}$wanted$^{2.1}$to$^{1.4}$make$^{.8}$our$^{.8}$report$^{1.0}$stand
10 $^{2.2}$out$^{1.1}$from$^{.9}$the$^{.8}$rest$^{4.7}$by$^{.8}$giving$^{.7}$it$^{1.3}$some$^{1.1}$interesting
11 $^{1.8}$format$^{.7}$. $^{2.4}$We$^{.7}$discussed$^{1.3}$the$^{.8}$possibility$^{.8}$of$^{3.3}$making$^{.7}$it
12 $^{1.8}$an$^{1.8}$interview$^{3.6}$or$^{.7}$talk$^{.9}$show$^{1.1}$or$^{2.0}$maybe$^{1.1}$even$^{.9}$a.
13 $^{.6}$trial.

in the two writing samples.

Pause times for propositions of predication and modification were identified prior to each lexical item in the surface expression of the predication and modification propositions. For example, the pause times for predicate nominal proposition #4 in Appendix A (ISA: COMMUNICATION, DIFFICULT) are located before each word in the surface structure: 2.3, 3.5, 1.9. Wherever arguments in propositions were repeated, their pause time was indicated only once. In addition, pause times at sentence boundaries were treated like any other pause because this study makes no prior assumptions about the efficacy of sentence boundaries during the production process.

Results

Table I displays mean pause times and standard deviations for discourse type and for proposition type. Table II summarizes the two-way analysis of variance (ANOVA) for discourse type (reporting and generalizing), proposition type (predication and modification), and their interaction. Pause time was the dependent variable; discourse type and proposition type were the dependent variables.

The only significant main effect was for proposition type. Predicate propositions involve greater pause time than modification propositions. This result was expected; we assumed that predicate relationships form the ideational core of a text while modification relationships serve to restrict and limit ideas.

Table I

Mean Pause Times and Standard Deviations for Discourse Type and Proposition Type

Proposition Type	Discourse Type					
	Generalizing			Reporting		
	$\bar{X}$	SD	N	$\bar{X}$	SD	N
Predication	2.28	2.58	46	1.97	1.72	36
Modification	1.04	.83	15	1.18	1.14	24

Table II

Analysis of Variance

Source of Variation	SS	DF	MS	F	P
Main Effect					
Discourse Type	3.042	1	3.042	0.80	.37
Proposition Type	24.899	1	24.899	6.58	.01
Two-Way Interaction		1			
Discourse Type X Proposition Type	1.283		1.283	.34	.56
Residual	442.509	117	3.783		

One possible explanation for the non-significant difference in discourse type is that these samples represent only the first 100 words of the text. During this initial production phase the writer may have been gradually "warming up." Further studies which rely on pause time data for entire texts may demonstrate significant differences if the writer establishes a more fluent pace during the production of reporting.

The interaction effect between discourse type and proposition type was non-significant, suggesting that discourse type is irrelevant to the pause time involved in the production of propositions. Again, for the same reasons described above, the use of whole discourse samples may influence this statistical comparison. Finally, it is important to note that decisions involved in these two broad categories of propositional type reflect a very small proportion of the total variance. Note the large residual sum of squares compared with the sum of squares for proposition type. Further research is needed to produce a production model which accounts for more of the variance.

Discussion

The statistical results support the claim that conceptualizing predicate relationships is more time consuming and cognitively more demanding than conceptualizing modification relationships. Conceptualizing the predicate relationship during text production involves defining the action or state as well as (in predicate case propositions) the appropriate cases: agent, experiencer, instrument, source, or goal. Conceptualizing modification propositions takes less time because these propositions serve to limit or restrict the already developed predicate proposition. Listed below are several examples taken from Figure 1 (generalizing) which demonstrates the sharp contrast in the pause time for predication and modification.

Generalizing

Modification

Line #	(see Figure 1)	Proposition # (see Appendix A)
1	(.6) successful	2
1	(1.1) person (.5) to (.8) person	1
2	(.6) in (.9) general	6
2	(.9) poor	5
5	(.8) basic	17
6	(.7) their (.9) own	24, 25

Predication

Line #		
1, 2	(2.3) communication (3.5) is (1.9) difficult	4
5	(5.5) people (4.8) tend	22
11,12	(12.8) the (.6) situation. . . (3.2) leads	44

When we examined the surface structure expressions of the modification and predication propositions patterns emerged which supported the statistical comparisons. Eighty per cent of the modifiers in both reporting and generalizing assume the pre-nominal position, a standard form in the English language. This suggests that modifiers may be planned in conjunction with the central predicate relationship but play a relatively minor role. As suggested before, the larger planning operation involves conceptualizing the predicate case relationship which includes the arguments that modifiers modify. Once the arguments are established, it is a relatively easier task to assign modifiers, because the lexical list from which to choose is constrained considerably by the arguments in the predicate proposition.

The surface structure patterns associated with predication propositions are more varied than the patterns associated with modification propositions. Predication propositions emerge in the surface structure as participial phrases, verbals, and main verbs. Furthermore, relations in main verb positions take longer than participial phrases or verbals. This suggests that semantically, participial phrases and verbals act as modifiers and not as core relationships. This contrasting pattern for modification and predication propositions suggests important questions about how ideas are developed and then formatted in a linear sequence in conventional syntax during the production process.

Even though no significant differences emerged for the discourse variable, patterns in discourse structure and proposition type suggest that the writer relied on different decision patterns for reporting and for generalizing. For instance, we found that the writer had produced only one predicate nominal proposition in reporting but five in generalizing:

Generalizing

Predicate Nominals

Line #		Proposition #
1, 2	communication is difficult	4
2, 3	people are (poor) listeners	7
4	It is (my) feeling	15
8	Communication is successful	31
8, 9	there is give and take	32

Predicate nominal propositions serve to name entities (SOMETHING IS SOMETHING) and are often a more abstract type of proposition. Functionally, they introduce arguments which will be developed later in the paragraph. Such naming propositions are crucial for generalizing since the writer must make an assertion or define a problem for further elaboration. In reporting, there is a heavier emphasis on agent-action propositions. Since in reporting the agent is always the same, the time seems to be taken up planning for new content. These patterns support the notion that schemas representing different discourse types are reflected in the semantic base of the text.

In conclusion, applying Kintsch's propositional analysis to segments of time-monitored writing protocols allowed us to describe the locations of pauses with respect to the semantic dimensions of written discourse production. The interim results of this analysis (studies with larger data sets are currently underway) suggest that further exploration of the semantic functions of pauses is an important issue in current psycholinguistic research.

Appendix A

Propositional Text Base for Generalizing

Sentence #	Propositional Representation
(1)	1 (QUALITY: COMMUNICATION, PERSON-TO-PERSON)
	2 (QUALITY: 1, SUCCESSFUL)
	3 (QUALIFY: 2, TRULY)
	4 (ISA: COMMUNICATION, DIFFICULT)
	5 (QUALIFY: LISTENERS, POOR)
	6 (QUALIFY: PEOPLE, IN GENERAL)
	7 (ISA: PEOPLE, LISTENER)
	8 (CAUS: BETWEEN, 5, 4)
(2)	9 (LISTEN TO: A: THEY P: THEMSELVES)
	10 (SPEAK: A: THEY)
	11 (>SPEAK: A: SOMEONE ELSE)
	12 (>PREFER: A: THEY G: 9, 10)
	13 (REF: THEY, PEOPLE)
	14 (CONTRAST: 12, 11)
(3)	15 (ISA: FEELING, IT)
	16 (QUALITY: FEELING, MY)
	17 (QUALITY: SELF-CENTEREDNESS, BASIC)
	18 (OCCURS: P: THIS)
	19 (REF: THIS, 12)
	20 (CAUS: BETWEEN, 17, 12)
(4)	21 (INTEREST: A: PEOPLE P: LIVES)
	22 (TEND: A: PEOPLE, P: 21)
	23 (QUALIFY: 21, MORE)
	R23 (QUALIFY: 21, TOO)
	24 (QUALIFY: LIVES, OWN)
	25 (QUALIFY: LIVES, THEIR)
	26 (EXPOSE: A: PEOPLE P: THEMSELVES)
	27 (BOTHER: A: PEOPLE P: 26)
	28 >(PURPOSE: TO, LEARN)
	29 (LIVE: A: OTHERS)
	30 (QUALIFY: LIVE, HOW)
(5)	31 (ISA: COMMUNICATION, SUCCESSFUL)
	32 (ISA: > EXIST, GIVE AND TAKE)
	33 (MANNER: BETWEEN, THE PARTIES)
	34 (CAUS: ONLY WHEN, 31, 32)
(6)	35 (REF: ONE, PARTY)
	36 (QUALIFY: ONE, EACH)
	37 (CONTRIBUTE: A: ONE)
	38 (EXTENT OF: EQUALLY, 37)
	39 (ACCEPT: A: ONE P: CONTRIBUTION)

40 (QUALIFY: CONTRIBUTIONS, OTHERS)
41 (CONJ: AS WELL AS, 37, 39)

---

(7) 42 (DESCRIBE: A: I P: SITUATION)
43 (LOC: ABOVE, 42, >TEXT)
44 (LEAD TO: I: SITUATION P: COMMUNICATION)
45 (QUALITY: COMMUNICATION, POOR)
46 (GIVE: A: EVERYONE)
47 (TAKE: A: EVERYONE)
48 (WANT: A: EVERYONE P: 46, 47)
49 (CONC: >YET, 46, 48)
50 (CAUS: SINCE 49, 44)

> implied proposition   R revision $ marker for required case

Appendix B

Propositional Text Base for Reporting

Sentence #	Propositional Representation
(1)	1 (MANAGE: A: I P: MYSELF G: PROJECT)
	2 (INVOLVE: 1)
	3 (QUALIFY, SCHOOL, HIGH)
	4 (QUALIFY, YEAR, JUNIOR)
	5 (QUALIFY, 4, MY)
	6 (TIME: IN, 4, 3)
	7 (TIME: BACK DURING 4, 3)
	8 (NUMBER OF, MORE, > BETTER, LITTLE)
	9 (QUALIFY: > QUALITY, MORE)
	10 (QUALIFY: > QUALITY, RUN-OF-THE-MILL)
	11 (QUALIFY: 10, JUST)
	12 (ISA: > QUALITY, PROJECT)
	13 (CONT: > BETTER 9, 10)
(2)	14 (QUALITY OF: CLASS, HISTORY)
	15 (QUALITY OF: 14, AMERICAN)
	16 (QUALITY OF: 15, AP)
	17 (QUALIFY: 16, MY)
	18 (LOC: IN, 16, 15, 14, 13)
	19 (PAIR OFF: A: STUDENT)
	20 (QUALITY OF: ERA, JACKSONIAN)
	21 (EXTENT OF: ASPECT, SOME)
	22 (QUALIFY: 20, ASPECT)
	23 (DO A: STUDENTS G: REPORT)
	24 >(CONCERNS G: REPORT P: ASPECT)
	25 (PURPOSE: TO 19, 23)
(3)	26 (QUALIFY: CO-CONSPIRATOR, MY)
	27 (CONJ: AND, CO-CONSPIRATOR, I)
	28 (CHOSE: A: 27 P: DANIEL WEBSTER)
	29 (QUALITY: HISTORY, U.S.)
	30 (QUALITY: FIGURE, FASCINATING)
	31 (EXTENT OF: 30, MOST)
	32 (TIME: IN, 29)
	33 (ISA: A: DANIEL WEBSTER, FIGURE)
	34 (FOUND OUT: A: WE)
	35 (MANN: AS 34, 33)
	36 (TIME: SOON, 34)
	37 (REF: WHO, DAN'L WEBSTER)
	38 (REF: WE, 27)
(4)	39 (QUALITY: FORMAT, INTERESTING)
	40 (EXTENT OF: 39, SOME)

41 (REF: IT, REPORT)
42 (GIVE: A:$ P: REPORT G: FORMAT)
43 (WANT: A: WE P: REPORT G: STAND-OUT)
44 (PURPOSE: TO MAKE, 43)
45 (QUALIFY: REPORT, OUR)
46 (REF: OUR, 27)
47 (REF: WE, 27)
48 (REF: REST, REPORTS)
49 (CONT: STAND OUT, 45, 48)
50 (PURPOSE: BY, 42)

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(5) 51 (QUALIFY: TRIAL, EVEN)
52 (QUALIFY: TRIAL, MAYBE)
53 (QUALITY: SHOW, TALK)
54 (DISCUSS: A: WE P: POSSIBILITY)
55 (REF: WE, 27)
56 (DISJ: OR, INTERVIEW, SHOW, TRIAL)
57 (MAKE: A: WE P: IT G: 56)
58 (REF: IT, REPORT)

>implied proposition R revision $ marker for required case

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NUCLEAR STRUCTURES IN DISCOURSE

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There is a minor problem in the description of discourse structure that occasionally nags at some of us; it is the matter of the topic sentence. Every handbook that takes up the paragraph and every manual devoted entirely to the paragraph makes the topic sentence the first topic of discussion, usually insisting that a properly constructed paragraph begins with one. A few writers observe that while the topic sentence can sometimes occur at the end of a paragraph, or even in the middle, the canonical position is nevertheless at the beginning. But James Braddock found that topic sentences occur at either the beginning or the end in fewer than one of every four paragraphs, a finding that seems to have made not much dent on these writers of textbooks, but that does seem to support those who read natural prose with an eye for such matters.[1]

But we ought to be much more puzzled over paragraphs such as the two below, both from Francis Christensen's now classic article on the generative rhetoric of the paragraph.[2] I will not rehearse in detail here his treatment of paragraph structure and topic sentences. According to Christensen, paragraphs are constituted of coordinate, subordinate, or mixed sequences of sentences, the most general sentence being the topic sentence. Regardless of where it occurs in a paragraph, all other sentences are subordinate to, or coordinate with, that topic sentence. It ordinarily comes first in a paragraph, but wherever it comes, it is number (1) in the hierarchy of sentences. The first example below is an example of a paragraph constituted of a purely subordinate sequence:

1 Wherever we encounter a paradox, we may look for a philosophical problem--that is, for a problem of meaning.
  2 Philosophy is the systematic study of meanings.
    3 Paradoxes are engendered by inexact or incomplete definitions, and a closer study of the concepts involved in them usually removes the paradoxes and reveals interesting distinctions among closely related processes and conditions instead.
      4 So the question that confronts us is essentially what we mean by culture and what by civilization.
        5 A more precise understanding of these two terms may serve to explain how, despite their intimate connections, a great strain may arise between a rapidly growing civilization and cultural values.

S.K. Langer. Philosophical Sketches.

The first sentence, (1), is the topic sentence, the rest step-wise subordinate each to the one before.

But there is a problem here: suppose we successively deleted sentences until we were left with the one sentence without which the paragraph would fail, the one sentence for whose sake the rest of the paragraph exists, the one sentence that, for the sake of a better term, communicates the POINT? Would it not certainly be sentence (4)? At least that is the sentence that a very substantial majority of informants have said would be the last to go.

Now it might be that Christensen was simply wrong about which sentence in that paragraph should be its topic sentence. Perhaps sentence

(4) should be numbered (1) and that the others should be subordinated to it. That would raise problems about the notion of subordination, perhaps, but not a problem as serious as that raised by this next example, also from Christensen:

1 ______________________
2 In Spain, where I saw him last, he looked profoundly Spanish.
3 He might have passed for one of those confidential street dealers who earn their living selling spurious Parker pens in the cafes of Malaga or Valencia.
4 Like them, he wore a faded chalk-striped shirt, a coat slung over his shoulders, a trim, dark moustache, and a sleazy, fat-cat smile.
4 His walk, like theirs, was a raffish saunter, and everything about him seemed slept in, especially his hair, a nest of small, wet serpents.
3 Had we been in Seville and his clothes more formal, he could have been mistaken for a pampered elder son idling away a legacy in dribs and on drabs, the sort you see in windows along the Sierpes, apparently stuffed.
2 In Italy he looks Italian; in Greece, Greek: wherever he travels on the Mediterranean coast, Tennessee Williams takes on a protective colouring which melts him into his background, like a lizard on a rock.
2 In New York or London, he seems out of place, and is best explained as a retired bandit.
3 Or a beach comber: shave the beard off any of the self-portraits Gaughin painted in Tahiti, soften the features a little, and you have a sleepy outcast face that might well be Tennessee's.
Kenneth Tynan, Curtains.

This paragraph, according to Christensen, illustrates a paragraph that has no topic sentence. (I have put a (1) at the top to emphasize its absence. A (1) does not appear in Christensen's illustration.) But let us ask the same question we asked of the first example: what sentence would be the last to go? Everyone would agree, at least everyone has so far agreed, more than 20, that if any sentence was indispensable it would be the clause beginning

> . . . wherever he travels on the Mediterranean coast. . .

Now again, Christensen may simply have been wrong: perhaps that clause in the second (2) sentence is indeed the topic sentence, even though it is the second clause of a compound sentence. We can ignore orthographic boundaries, even if Christensen did not.

But let me make two changes in that paragraph to raise a somewhat more perplexing pair of problems. First, let's change the point-sentence to this:

> all of which means that wherever he travels. . .

This surely must be at least faintly embarrassing to a follower of Christensen because it means that the topic sentence is now a subordinate clause attached to a main clause. But that means that the rhetorically superordinate topic clause is grammatically subordinate to a grammatically superordinate clause that is rhetorically subordinate. But again, we might agree to ignore clause and sentence boundaries to assign topichood to any clause we believe should be a topic--what?--sentence, clause, perhaps even phrase?

But that change would not disturb the status of the topic quite as much as a second change might, a change that would begin the whole sequence with something like this:

(1) I'd like to tell you about Tennessee Williams.

Now this unequivocally fulfills all the requirements of a topic sentence: it stands at the beginning of the paragraph; it surely announces its main idea, its topic; it is the most general sentence--all other sentences are subordinate to it. In Christensen's terms, it is an unequivocal (1). But that doesn't change the status of our revised clause about Tennessee Williams' chameleon-like character: in any analysis of the relative importance of information and the role of that information in paragraph structure, that subordinate clause would still be the last clause to go.

I don't think that I have to muitiply examples here to make the point: whatever a topic sentence is, however superordinate it might be to other sentences in the paragraph, it does not necessarily communicate the point of a paragraph. It might, of course. The passage about Williams could begin with:

Wherever Tennessee Williams travels on the Mediterranean. . .

That would constitute both a topic sentence and the main point--the archetypal topic sentence that writers of handbooks seem to have in mind when they write about the virtues of well disposed paragraphs. But if Braddock was correct about the reality of such topic sentences in real prose, and if we are correct here about the distinction between general introductions and points, then the archetypal topic sentence is not just honored more in the breach than in the observance--it may not even exist as we understand it at all.

I would like to suggest a way out of this minor contradiction, a way that may at the same time open up a new perspective on discourse structure: the issue that I address here in regard to the paragraph exists as well in larger structures of discourse. And as I will try to suggest, it also exists in units of discourse smaller than the paragraph. What I will propose here is a way that will not only allow us to understand better the nature of the paragraph, a relatively minor problem, but provide us as well with what might qualify as nuclear rhetorical units of discourse structure.

We can approach the problem through an analogy to other kinds of linguistic structure. (Let me emphasize at the outset that I am _not_ arguing that units of discourse are structured like sentences. I am suggesting only that the kind of perspective I am going to propose is entirely familiar.) By now we are easy with the idea that a sentence is composed of two levels of structure. We have a fixed surface order of the traditional subject-verb-(complement) and a variably placed level of semantic structure that case grammarians call agent-action-goal.[3] (I grossly oversimplify, of course: case grammars do not order the elements in this sequence, but the differences and oversimplification do not damage the analogy.) We have a canonical intersection:[4]

subject	verb	complement
agent	action	goal

The least complex sentence matches subject-agents, verb-actions, and complement-goals:

subject	verb	complement
we	investigated	the event
agent	action	goal

But we can dislocate the coincidence:

subject		verb	modifier
The investigation	of the event	was done	by us
action	goal		agent

In much the same way, the rhetorical movement of a sentence has a bi-level structure. A sentence has a relatively fixed structural rhetorical order of topic-comment:

topic	comment
In regard to taxes,	there is bound to be an increase

The first noun phrase is often, not always, the topic of the sentence, and usually, though not invariably, the subject. In the example above, it is an introductory prepositional phrase: taxes is the topic, that about which the writer will assert something; the comment, that which the writer asserts, is bound to be an increase. This is a relatively fixed level of rhetorical, or functional, syntax.

But through this level of functional syntax we can permute the variably placeable information structure of theme and rheme. Theme is the relatively older, relatively more accessible, relatively more familiar, relatively less surprising and informative semantic content. Rheme is the relatively newer, relatively less familiar, relatively less accessible, relatively more surprising and informative semantic content. In carefully constructed English sentences, themes ordinarily precede rhemes, and thereby correspond to topics. Here is a canonical sequence:

topic	comment
My next point	has to do with taxes.
theme	rheme

The topic of the sentence is my next point, and the comment, taxes. The less surprising, more familiar, less informative content is the theme: my next point. That is, having already made one or more points, the writer ought not surprise us when he or she announces one more. What we cannot guess, or at least cannot naturally anticipate, is that the next point is going to be about--taxes. Taxes, then, is the rhematic information.[5]

And just as we can permute the variably placeable elements of agent and action through the fixed elements of subject and verb and object, so can we permute themes and rhemes through topics and comments.

topic	comment
The matter of taxes	will be my next point.
rheme	theme

In fact, these two levels of rhetorical structure can be arrayed with the two levels of syntactic-semantic structure:

<table>
<tr><td>subject</td><td colspan="2">verb</td><td>complement</td><td>fixed grammatical syntax</td></tr>
<tr><td>agent</td><td colspan="2">action</td><td>goal</td><td>variable semantic content</td></tr>
<tr><td colspan="2">topic</td><td colspan="2">comment</td><td>fixed functional syntax</td></tr>
<tr><td colspan="2">theme</td><td colspan="2">rheme</td><td>variable rhetorical content</td></tr>
</table>

I would like to suggest that units of discourse have an analogous structure. Let me illustrate first with a pair of simple paragraphs:

(a) (1a) The world will never be free from war until we free ourselves from that component of patriotism that threatens our very existence: the readiness to take offense at fancied slights to national honor. (2a) Patriotism is a very complex emotion. (3a) It combines pride, devotion, and self-sacrifice. (4a) It has been celebrated through the ages. (5a) But only a pride in statehood that is rational and mature can save us from endless national conflict and eventual self-destruction.

(b) (1b) Patriotism is a very complex emotion. (2b) It combines pride, devotion, and self-sacrifice. (3b) It has been celebrated through the ages. (4b) But the world will never be free from war until we free ourselves from that component of patriotism that threatens our very existence: the readiness

> to take offense at fancied slights to national honor. (5b) Only a pride in statehood that is rational and mature can save us from endless national conflict and eventual self-destruction.

Now at some level of analysis, these two paragraphs are not synonymous. Just as:

> My next point is the matter of taxes.
>
> The matter of taxes is my next point.

are not unqualifiedly synonymous, neither are those two paragraphs. But at some other level of analysis, they do "mean the same thing." If the one is true, then the other must also be true, and vice versa. If this is so, then we can examine the discourse structure of these two paragraphs independently of their content.

In paragraph (a), the first sentence, (1a), is unequivocally a topic sentence. It is the sentence from which the rest of the paragraph exists. Without sentence (1a), the paragraph has no reason for being. In paragraph (b), on the other hand, the first sentence, (1b), seems also to serve as an unequivocal topic sentence. It is general; it introduces the topic of the paragraph; it is the sentence from which the rest of the paragraph flows. But sentence (4b), the same sentence as (1a), is still the sentence for which the rest of the paragraph exists. Sentence (4b) may not seem to be the topic sentence, but it is surely the point of the paragraph, just as the same sentence when it occurs as the first sentence, is both a seeming topic sentence and the point.

We might resolve this minor puzzle by distinguishing between functional roles and communicative saliency. Paragraphs (I will later claim _all_ units of discourse) must open by raising an issue of some kind, in some way. That issue must then be resolved in some way. That is a simple beginning-ending relationship. It is roughly equivalent to topic-comment and very loosely analogous to subject-verb-complement.

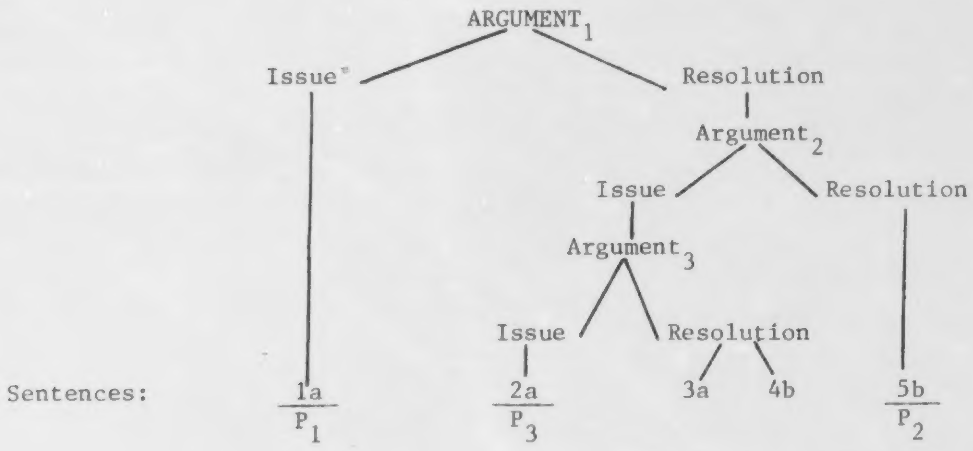
Through those functional but semantically empty roles, we can permute discourse elements of greater or lesser communicative saliency. The unit of greatest saliency I have called the _point_ of the discourse unit, in this case the paragraph. The functional role is an open position; the unit of communicative saliency is a moveable, variably placeable element of information.

We can represent this relationship in the kind of bi-level system we use for other levels of analysis:

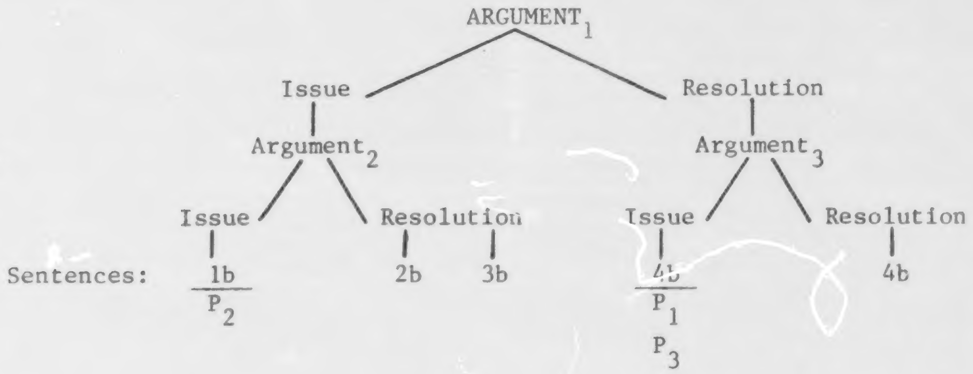
Issue	Resolution
Point	Base

I will elaborate this model in a moment, but this simple representation of the proposed bi-level structure of discourse will serve our purposes here. I will call the constituent constituted by Issue and Resolution a _Rhetorical Argument_. The term argument has nothing to do with the colloquial sense of debate or controversy. It is a purely formal designation for the constitute.[6] I also propose that arguments may be embedded in arguments, to create structures both larger and smaller than paragraphs. The two paragraphs about patriotism would have, on this interpretation, the following structure. Since each argument must also have a point, I have indicated the relevant point for each argument below the specified sentence.

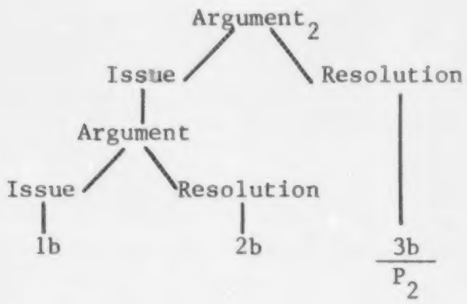
(a)


ARGUMENT$_1$
Issue
Resolution
Argument$_2$
Issue
Resolution
Argument$_3$
Issue
Resolution
Sentences:
1a
P_1
2a
P_3
3a
4b
5b
P_2

(b)


ARGUMENT$_1$
Issue
Resolution
Argument$_2$
Argument$_3$
Issue
Resolution
Issue
Resolution
Sentences:
1b
P_2
2b
3b
4b
P_1
P_3
4b

It is possible that different readers might structure this paragraph in different ways. Argument_2, for example, might be perceived as



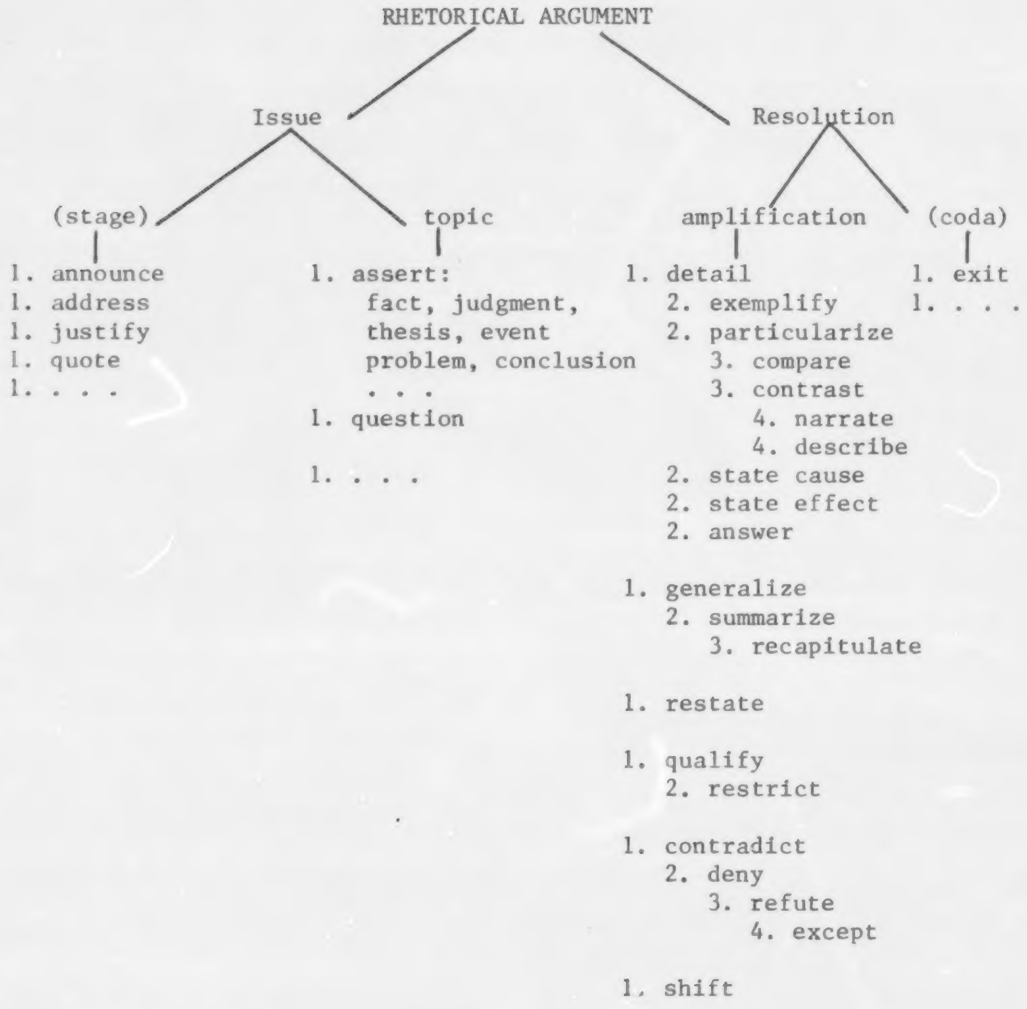
I do not assert that all textually represented paragraphs will have the same perceived structure, because it is by now a commonplace in cognitive psychology that we construct texts rather than receive them.[7] I assert only that the structure of a paragraph may be represented in this way. I also tentatively assert that an argument could be made that we process discourse somewhat along these lines: that is, we are always conscious that any successive sentence could make the stretch of discourse we happen to be processing as a resolution to an earlier issue, simply an issue in a larger argument. For example, suppose we had a sentence (6a)

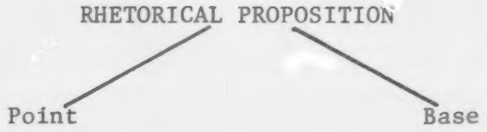
> Nevertheless, we must continue to inculcate patriotism in our young people if we are to survive the immediate Soviet challenge to our very existence. We must teach them. . .

This sentence becomes the resolution to the issue raised in sentences (1a) - (5a), and also is the point of the now over-arching argument that subsumes (1a) - (5a) and (6a).

I would now like to inquire into some of the finer details of the issue-resolution, point-base structure. The tree-structure represents at the issue-resolution level an ordered relationship: issue always precedes resolution. But I have not discussed the nature of the relationship. In paragraph (a), the relationship between (2a) and (3a) - (4a) is one of specification and characterization. The relationship between (1a) and (2a) - (4a) is similarly specification and characterization. (2a) - (4a) relate to (5a) through contradiction or qualification.

Microstructural relationships between and among sentences is one of the least well understood aspects of textlinguistics. There have been dozens of lists proposed to describe the relationships, but once we go beyond the most fundamental kinds of relationships stipulated by modal logics: and, or, but, so, then (and it has been argued that even these could be reduced to but), the lists become ad hoc, anecdotal, encyclopaedic.[8] What follows is an attempt to introduce some regularity to the lists. I claim for it no more than suggestiveness, however. Following the model are comments on particular points.


RHETORICAL ARGUMENT
Issue
Resolution
(stage)
topic
amplification
(coda)
1. announce
1. address
1. justify
1. quote
1. . . .
1. assert:
fact, judgment,
thesis, event
problem, conclusion
. . .
1. question
1. . . .
1. detail
2. exemplify
2. particularize
3. compare
3. contrast
4. narrate
4. describe
2. state cause
2. state effect
2. answer
1. generalize
2. summarize
3. recapitulate
1. restate
1. qualify
2. restrict
1. contradict
2. deny
3. refute
4. except
1. shift
1. exit
1. . . .


RHETORICAL PROPOSITION
Point
Base

Some commentary on this model:

a. Rhetorical argument. I use the term rhetorical argument to designate discourse structure at the syntagmatic level. The term argument has nothing to do with the colloquial sense of argument; it merely designates the whole model. The elements of the model and the rhetorical acts specified for its parts (more of this later) imply ordered relationships, implied by the verbal implication of the nouns: an issue is resolved, a topic is amplified, an assertion is detailed.

b. Issue. The issue always introduces the argument. As I mentioned in the foregoing, the issue may be only the first sentence, or it may extend through several sentences to the last sentence. It is whatever raises an expectation to be fulfilled. In this sense, form is defined by the resolution of an issue, after Burke's definition of form: the raising and satisfaction of expectation.

c. Resolution. The resolution, like the issue, is a purely formal structure, in the same way that subject and predicate, topic and comment are purely formal structures. The resolution is simply that which completes, in the same way predicate completes the subject function.

d. Stage. I am not certain about this element. I conceive it to be that position that allows introductory elements such as

> I have something important to say which I have not yet said.

It is the kind of statement that is entirely metadiscourse, a pragmatic operator, that does not further the development of the discourse proper, the subject matter about which one discourses.

e. Topic. The topic is the first element in the argument that raises an issue pertinent to the discourse proper, as opposed to metadiscourse. It would be the second sentence in

> Essays of this kind of not easy to write. Death is a painful subject for all of us, especially the death of a child.

On the other hand, if we do not distinguish between discourse and metadiscourse, then the first sentence is an issue and the second a resolution. I am at the moment uncertain how best to resolve this matter.

f. Amplification. Amplification resolves the topic by asserting something about it. It is the discourse element in which the content of the discourse is expressed as a resolution to the issue in ways I shall describe in a moment.

g. Coda. Coda balances stage. It is the kind of sentence that refers to the situational pragmatics rather than to the discourse proper. It represents the kind of utterance such as:

> More could be said about this matter, but we must move on.

h. Rhetorical acts (numbered). The assumption behind this inventory of rhetorical acts is that sentences and sections are related to sentences and sections by our understanding of how their author intended us to relate them. The connections are constructed, not specified. Further, the acts are either externally transitive because they announce, address, justify, etc., what is to come or amplify, detail, generalize, restate, etc., what precedes; or they are internally transitive because what is asserted, questioned, etc., is the utterance itself, not something elsewhere inside the argument. In other words, everything in the amplification is transitively related to everything in the topic.

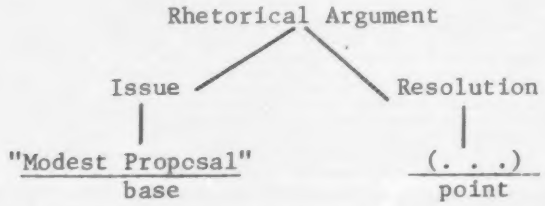
I do not assert that the rhetorical acts listed here exhaust all possible acts, nor do I assert that the ones listed here are the best formulation for them. They are a compilation of lists offered by a number of sources and from a survey of various Thesauruses. The step-wise descent is intended to indicate the hierarchical relationships among the items. That is, we exemplify in order to detail, we compare in order to exemplify, we narrate in order to compare, etc. The hierarchy is only suggestive.

A matter I will not explore here is the context-sensitive nature of some of the relationships. That is, obviously a question can only be resolved by an answer; a generalization can only follow an iterated list of facts, judgments, etc.

Two relationships often found in lists of microstructural relationships I have omitted: they are those suggested by and and or. At the moment, I have decided that these simply iterate the relationships already stipulated, and so do not constitute rhetorical acts of the kind I am trying to arrange. They apply to almost every rhetorical act: that is, I can assert facts iteratively, state causes iteratively, exemplify iteratively, etc. Therefore, I think the act of iteration, or alternation, is better treated at another level of discourse grammar. Some acts, of course, are less likely to be iterated than others: I ordinarily contradict only once, draw only one conclusion, etc.

i. Rhetorical proposition. This level of analysis corresponds to the variably placeable units of meaning in the rhetorical dimension. I am not entirely clear how best to distinguish what should go into this level other than point and base. There almost surely must be other elements than those listed here, but how one would discover and justify them remains to be seen.

j. Point. The point is the center of the argument. It may appear in either topic or amplification. It is hard to imagine it occurring in either the stage or coda. In some cases, the point of the macro-argument may have to be inferred. In Swift's "Modest Proposal," for example, the point is nowhere expressed in the text. It may be that we can deal with such texts like this:



That is, the whole of "The Modest Proposal" is the issue, our inferred response to it the resolution, in which inferred resolution is the point. Obviously, I speculate.

I have already described two of the consequences of this perspective on discourse structure:

1. We may supplant the notion of topic sentence with a more natural vocabulary for the working of a paragraph.

2. The unit of the argument/proposition is recursive both up from the level of the paragraph and down into it, at least qualifying this structure as an analytical device of some force. Some other consequences I have not yet mentioned:

3. Because the issue-resolution/point-base applies to the whole discourse, it allows a perspective on the macrostructure of the discourse that is pedagogically useful. Once that largest structure is articulated, the form of the whole is largely set. The largest arguments within that superordinate macroargument provide the same recursive analysis. Rather than trying to represent a discourse in an outline made up of topic sentences, the outline can be constructed out of points.

4. The function of the opening sentence(s) in a paragraph--or any other unit--become clearer. Those who claim that topic sentences may occur at the end or in the middle of a paragraph say nothing about the importance of opening a paragraph in a way that gets to those "topic sentences" clearly and coherently. This view forces us to attend to

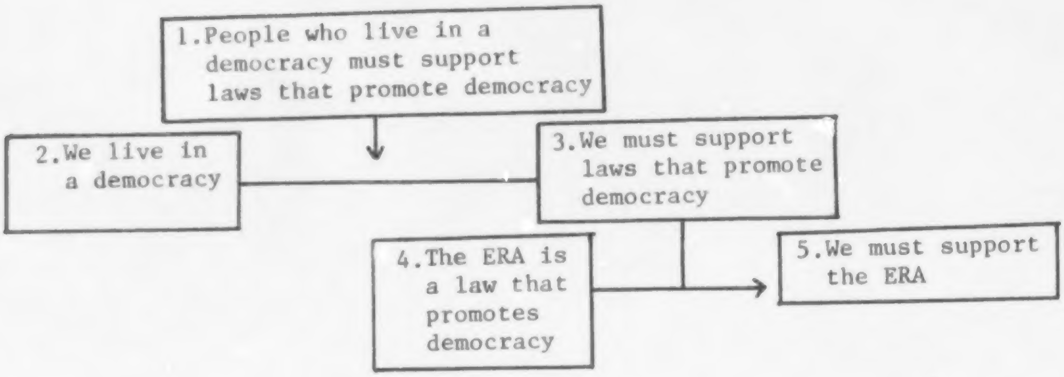
opening sentences even when they do not express the point of a paragraph.

5. I am inclined to think that one of the reasons we recall macrostructure from narrative so much more readily than we recall macrostructure from non-narrative discourse is that narrative discourse is much less self-embedded. Unless the macrostructure of a non-narrative discourse is especially clear and distinctly marked, it is very difficult to describe what that structure is. I suspect that one reason this is so is that the interlacing of issues and resolutions through various hierarchical levels makes any clear sense of expository movement relatively indistinct.

I have no doubt that this model will have to be adjusted in many significant ways. I am not satisfied with the notion of rhetorical act, as it now stands. Rhetorical acts often do not connect sentence with sentence (or argument with argument) directly, but rather through a chain of unstated inferences. Thus,

> We live in a democracy. We must pass the ERA.

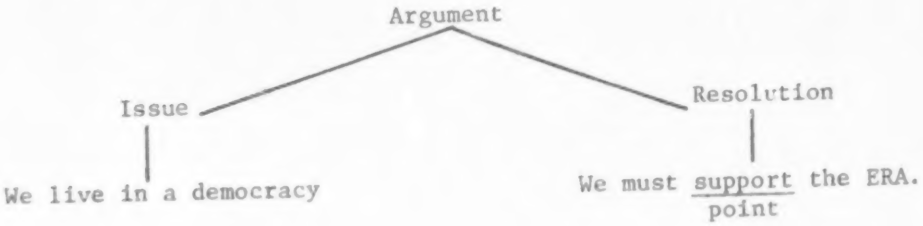
On the one hand, we can assert that the second sentence is related to the first by the rhetorical act of asserting a logical consequence. But in fact, this is an enthymeme of roughly the following structure (I use Stephen Toulmin's notation here for the layout of arguments.[9]):


1.People who live in a democracy must support laws that promote democracy
2.We live in a democracy
3.We must support laws that promote democracy
4.The ERA is a law that promotes democracy
5.We must support the ERA

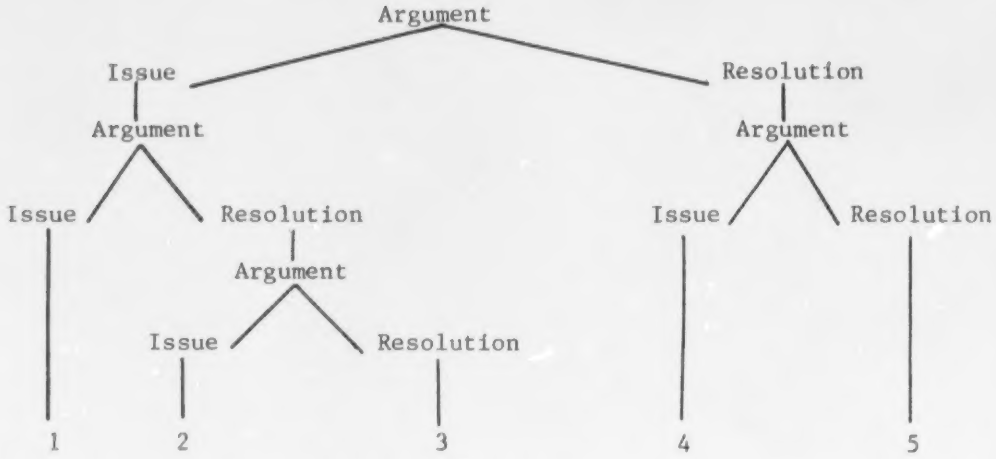
Thus the microstructural relationship between

(2) We live in a democracy. (5) We must pass the ERA.

is on the surface a kind of rhetorical argument:


Argument
Issue
Resolution
We live in a democracy
We must support the ERA.
point

But it may turn out that in order to account for such relationships, we will have to include the kind of unstated premises in the argument structure that I have tickled out of the enthymeme:


Argument
Issue
Resolution
Argument
Argument
Issue
Resolution
Issue
Resolution
Argument
Issue
Resolution
1
2
3
4
5

It is all very puzzling, much more puzzling than topic sentences.

FOOTNOTES

1. "The Frequency and Placement of Topic Sentences in Expository Prose," Research in the Teaching of English, 8 (1974), 301.

2. "A Generative Rhetoric of the Paragraph," College Composition and Communication, 16 (1965), 144-56.

3. Charles Fillmore, "The Case for Case," in Universals in Linguistic Theory, eds. Emmon Bach and Robert T. Harms, New York: Holt, Rinehart and Winston, 1968.

4. For an elaboration of this perspective, see my "Defining Com-

plexity," College English, 40 (1979), 595-609, and Style: Ten Lessons in Clarity and Grace, Chicago: Scott Foresman, 1981.

5. Herbert H. Clark and Susan E. Haviland, "Comprehension and the Given-New Contract," in Discourse Production and Comprehension, ed. Roy O. Freedle, Norwood, New Jersey: Ablex Publishing Corporation, 1977. 1-40.

6. Several writers have identified units smaller than a paragraph--and larger. Robert Longacre in "The Paragraph as a Grammatical Unit," in Syntax and Semantics, Vol. 12, ed. T. Givon, New York: Academic Press, 1979, 115-134, uses the term paragraph to identify units smaller than our definition of an orthographic paragraph. Willis Pitkin, in "Hierarchies and the Discourse Hierarchy," College English, 38 (1977), 649-59, and "X/Y: Some Basic Strategies of Discourse," College English, 38 (1977), 660-72, identifies pairs of sentences, and larger conglomerations of sentences as discourse units. Paul Rodgers, Jr.'s stadia of discourse identify units larger than orthographic paragraphs in "The Stadium of Discourse," College Composition and Communication, 18 (1967), 1978-85. More recently, Frank O'Hare has described units smaller than a paragraph as chunks: O'Hare and Dean Memering, The Writer's Work, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1980, 274-93.

7. Edward J. Crothers, Paragraph Structure Inference, Norwood, New Jersey: Ablex Publishing Corporation, 1979.

8. Several lists have been proposed. Among the more common are in these: M.A.K. Halliday and Ruqaiya Hasan, Cohesion in English, London:

Longmans, 1976; Ross Winterowd, "The Grammar of Coherence," College English, 32 (1970), 828-35; Richard Larson, "Sentences in Action: A Technique for Analyzing Paragraphs," College Composition and Communication, 18 (1967), 16-22. See also Pitkin and Longacre, note 6.

9. Stephen Toulmin, Uses of Argument, Cambridge: Cambridge University Press, 1964.